DOCUMENT RESUME

ED 413 415 CE 074 206

TITLE	The Literacy Equation: Competence = Capability? National Conference of the Australian Council for Adult Literacy Conference Papers (Queensland, Australia, November 7-9, 1996).
INSTITUTION	Queensland Council for Adult Literacy, Red Hill (Australia).
ISBN	ISBN-0-646-29908-5
PUB DATE	1996-11-00
NOTE	239p.
AVAILABLE FROM	Queensland Council for Adult Literacy, Inc., P.O. Box 30, Red Hill, Queensland 4059, Australia ($30 Australian).
PUB TYPE	Collected Works - Proceedings (021)
EDRS PRICE	MF01/PC10 Plus Postage.
DESCRIPTORS	Adult Basic Education; *Adult Learning; *Adult Literacy; Agricultural Education; Classroom Techniques; Competence; *Competency Based Education; Computer Literacy; Conventional Instruction; Delivery Systems; Educational History; Educational Planning; Educational Policy; Educational Practices; Educational Quality; Foreign Countries; Global Education; Indigenous Populations; Information Technology; *Literacy Education; Nonformal Education; Numeracy; Parent Participation; Student Centered Curriculum; Tutors; Volunteers; Workplace Literacy; Writing (Composition)
IDENTIFIERS	*Australia; Global Economy

ABSTRACT

Papers from the 19th Adult Literacy Conference convened by the Australian Council for Adult Literacy include: "A Little to the Right on Writing" (Brendan Bartlett, Margaret Fletcher); "Deconstructing the 'Australian Language and Literacy Policy'" (Helen Beazley); "Comparing Content-Centered and Learner-Centered Approaches in School Mathematics: Picking Up the Pieces in Numeracy with Adults" (Jennie Bickmore-Brand); "Developing Workplaces as Learning Environments: Towards a Learning Curriculum" (Stephen Billett); "Last CALL for All: Before IT (Information Technology) Races down the Superhighway" (Paula Burns); "Using Key Competencies to Solve the Equation" (Ralph Catts); "Quality and Competency Based Education and Training" (Clive Chappell); "Managing the Competency Based, Multi-level, Literacy Classroom: What Works" (Jean Clarke); "Fractions, Decimals and Adult Learners" (Tom J. Cooper, Shelley Dole); "Computing as Literacy--The Computing Practices of Language and Literacy Teachers" (Chris Corbell); "Chickens, Eggs and 'Access': Untangling Competence and Capability through a Re-examination of Skills, Knowledge, Values, Non-formal and Formal Learning in Agriculture" (Ian Falk, Sue Kilpatrick); "Challenges Facing Training" (William Hall); "Office Discourses: Which Attributes Are Given Authority in Institutional Classrooms?" (Ann Kelly); "Flexible Delivery: One Practitioner's Point of View--What Has to Change When You Go Flexible?" (Anne Kiley); "Aboriginal and Torres Strait Islander Adult Education Histories and Their Relationship to the Development of Academic Writing Skills" (Bill Langlands); "A New Work Order: Some Implications for Being Literate in a Global Economy" (Colin Lankshear); "Assessing Front-line Management the Identification of Personal Constructs in the Workplace" (Irena Morgan-Williams); "The Role of Volunteer Tutors in the History of Adult Literacy in Queensland" (Jean Searle); "Parents and Literacy

+++++ ED413415 Has Multi-page SFR---Level=1 +++++

(PAL)" (Julie Spreadbury); and "Choosing Change through Literacy" (Kath White). (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 413 415

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

● Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

J Farmer

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

THE LITERACY EQUATION

COMPETENCE = CAPABILITY?

BEST COPY AVAILABLE

AUSTRALIAN COUNCIL FOR ADULT LITERACY — 19th NATIONAL CONFERENCE
7–9 NOVEMBER 1996 SURFERS PARADISE TRAVELODGE GOLD COAST QUEENSLAND
Convened by the Queensland Council for Adult Literacy Inc

CONFERENCE PAPERS

CE 074 206

THE LITERACY EQUATION:
Competence = Capability?

19th National Conference
Australian Council for Adult Literacy
7-9 November 1996
Surfers Paradise, Australia

Conference Papers

Queensland Council for Adult Literacy
Brisbane, Australia, 1996

Material contained in the Collection of Conference Papers does not necessarily reflect the views of the Australian Council for Adult Literacy or the views of the Queensland Council for Adult Literacy.

Published in 1996
by the Queensland Council for Adult Literacy Inc
P.O. Box 301
Red Hill Q 4059
Australia
Ph / Fax (07) 3369 8422

ISBN: 0 646 29908 5

QUEENSLAND RAIL

The Queensland Council for Adult Literacy would like to thank ***Queensland Rail*** for their generous support in the publication of these papers.

Foreword

In the twentieth year of the Australian Council for Adult Literacy, the Queensland Council for Adult Literacy Inc convened the 19th Adult Literacy Conference.

The theme for the conference *The Literacy Equation, Competence = Capability?* brought together a variety of workers in the field of Adult Literacy - teachers, tutors, lecturers, people involved in workplace training, research, professional development, policy, curriculum, teacher education and administration. We welcomed Linda Brodkey, Professor, Department of Literature, University of California as one of the Keynote Speakers. Delegates from every state in Australia and from New Zealand participated.

This collection contains some of the papers presented. Only the papers which were sent to us before the conference have been published. In addition to these papers, there were presentations of Research, Contributions to Interest Groups and Workshops .

This is not a record of the proceedings but merely a sample.

The views expressed in the papers are those of the authors.

We would like to thank all presenters and delegates for their contribution to the success of the conference.

Monica Mitchell

Monica Mitchell
President QCAL Inc

Jenny Farmer

Jenny Farmer
Chair Conference Committee

Contents

Foreword

PAGE

Brendan Bartlett and Margaret Fletcher
A little to the right on writing 1

Helen Beazley
Deconstructing the *Australian Language and Literacy Policy* 11

Jennie Bickmore-Brand
Comparing Content-centred and Learner-centred Approaches in School Mathematics: Picking up the Pieces in Numeracy with Adults 19

Stephen Billett
Developing workplaces as learning environments: Towards a learning curriculum 33

Paula Burns
Last CALL for all: before IT races down the superhighway 55

Dr Ralph Catts
Using Key Competencies to solve the equation 58

Clive Chappell
Quality & Competency Based Education and Training 71

Jean Clarke
Managing the competency based, multi-level, literacy classroom: what works 80

Tom J Cooper and Shelley Dole
Fractions, decimals and adult learners 88

Chris Corbell
Computing as literacy - the computing practices of language and literacy teachers 98

Ian Falk & Sue Kilpatrick
Chickens, eggs and 'access':
Untangling competence and capability through a re-examination of skills, knowledge, values, non-formal and formal learning in agriculture 109

William Hall
Challenge facing training 124

Ann Kelly
Office Discourses: Which attributes are given authority in institutional classrooms? 129

Anne Kiley
.Flexible Delivery: One practitioner's point of view -
What has to change when you go flexible? 145

Bill Langlands
Aboriginal and Torres Strait Islander adult education histories and their relationship to the development of academic writing skills 149

Colin Lankshear
A new work order: Some implications for being literate in a global economy 157

Irena Morgan-Williams
Assessing Front-line Management the Identification of Personal Constructs in the Workplace 177

Jean Searle
The role of Volunteer Tutors in the History of Adult Literacy in Queensland 190

Dr Julie Spreadbury
Parents and Literacy (PAL) 214

Kath White
Choosing Change through Literacy 219

About the Authors 226

A little to the right on writing

Brendan Bartlett and Margaret Fletcher

There is a sizable group of university students who don't write well on assignments and examinations -- seemingly, not because they don't know what to write, but because they don't know how to write. They are usually in the first year of courses where their numbers are yet to be affected by attrition, and in courses or subjects deliberately chosen to avoid assessment items that require extended writing. These are not students whose progress is doubtful through inattention to subject matter or motivation to perform. To the contrary, many are quite knowledgable about content and keen to do well. They just do not complete writing assignments in ways that bring success and confidence.

There are identifiable elements to what counts as acceptable literate practice in academic writing. In what follows today, we will present our account of what students, lecturers, and we ourselves think these elements are, and describe through the voices of those in an ongoing program of research some of the difficulties undergraduate students experience in academic writing.

Talk

The first part of our research focused on the analysis of talk gathered through semi-structured interviews of 40 students and five lecturers conducted over one semester in 1995. Furthermore, talk with 7 first year students throughout second semester, 1996 provided additional data as a confirmation sample against which to check the earlier work. The resulting transcripts represent collectively, 35 hours of talk by students and lecturers about undergraduate writing.

Analyses involved several readings of the entire corpus to gain a generalised sense of repeated or characteristic themes. Further readings focused on disparate or idiosyncratic aspects of the talk. Drawing on Bakhtin's (1986 ; 1981) theory of *heteroglossia*, the challenge in these repeated readings was to interpret those diverse, influencing voices evident in the talk. An interpretive framework emerged which guided a systematic and empirical analysis using methodology described by Freebody and Ludwig (1996) and drawing on the work of Bartlett (1978) and Halliday (1985). An analysis of the linguistic features evident in talk reveals how meanings are made through vocabulary choices and sequential organisation of the talk. As both students and lecturers describe their experiences and perceptions of writing as an academic task, they reveal in their talk, assumptions and understandings about themselves, the writing task and factors in it that they consider significant.

The meanings that are made through 'talk' offer insights into characteristic and idiosyncratic ways students participate in the act of writing and ways they are shaped as writers. It may offer explanations for such educational issues as the relationship between student perceptions and student performance. Furthermore, through detailing academics' views of students as writers, it is possible to compare the construction of student as writer from perspectives of both students and lecturers.

The following thematic categories have guided the analysis:

- effective and ineffective performance
- knowledge of the declarative / procedural / conditional features of learning and performance
- themes emerging as critical in describing current and preferred tools of writing performance
- externality and internality of factors reported to have influenced one's own academic writing
- situated cognition and affect

The first two are the main categories presented in this session.

Student talk

Student perceptions of themselves as writers

Following category analysis, types of knowledge students talk about when describing themselves as writers, and their perceptions of what constitutes effective academic writing, were grouped on two dimensions. The first was whether the comments suggested effective or ineffective performance. The second was whether the content was of declarative type (what to write) or procedural type (how to go about the writing).

Reference to Performance / Self	Transcript	Type of Knowledge
Student 1.		
Self as a writer:	That's a hard one .. I don't really know (..)	
Ineffective performance	I don't think I know what I am doing all the time	Procedural
	Putting it all down so that it flows is a problem	
Effective performance	I guess making your point is important	Procedural
	Answering the question	Declarative
	Making a conclusion that matched the introduction	Procedural
	and keeping the reader interested	Declarative
Student 2.		
Self as a writer:		
Ineffective performance	Well I'm not very good	
Effective	If I understand the topic I can write lots	Declarative
Ineffective	but understanding is a problem	Declarative
Effective	Introduction should be very good	Procedural
Ineffective	Structure is a problem	Procedural
Ineffective	I tend to go off on a tangent	Procedural

Effective	Answering the question	Declarative
	Being able to express ideas	D & P
	Structuring your ideas	Procedural
Student 3	I go on a bit	Procedural
Self as writer:	I extend my sentence too much	Procedural
Ineffective	and I'm a bad speller	Procedural
	I've problems in sentence construction too	Procedural
Effective	Proof reading carefully so there are no mistakes	Procedural
	It has to have good content and in depth discussion	Declarative
	Creativity helps	Declarative Procedural

Figure 1. Student perceptions of themselves as writers categorized on effectiveness as a writer and type of information dimensions.

Figure 1 exemplifies the accounts students gave of themselves as writers and what they perceived as effective writing. It was evident throughout these interviews students had little experience in reflecting on themselves as writers. When asked to describe themselves as writers, they found the question of self-disclosure confronting and difficult to answer. Responses were brief, often tentatively offered, revealing uncertainty for some, and surprise at the question, for others.

Negative descriptors included frequent and repeated use of the following attributes *-not very good; average; ordinary; amateur; trouble with words; not confident; hesitant;* and '*I write as I speak*'.

Positive descriptors were infrequent but included- *concise; I'm OK; creative; I'm good;* and *I'm pretty good.* Four of the 40 students qualified their positive accounts with a particular form of writing. - story writing; creative writing; expressive writing and '*I'm a good letter-writer so I write lots of letters*'.

Comments were also qualified by statements of affect. The following comments represent the total affective attributes from the 40 interviews. They were- *I'm an emotional writer; motivated; get very involved in the writing but frustrated; If I understand the topic I can write lots; if I'm confident about the topic I can get into it; need to be in the right mood; I enjoy writing; it depends on the subject matter whether I enjoy it.*

Students associated their negative perceptions of themselves as writers with specific linguistic features. Coherence , cohesion, standard grammar and spelling were repeatedly identified as areas of concern. Poor time-management was mentioned by three students. Coherence at the text level, and cohesion at the sentence level, were the most frequent of the nominated problems. These attributions reflect the strong procedural nature of comments generally (See Figure 1). As one student said, '*It's not the research that's the problem.. It's getting the ideas down.*'

When they were asked to describe effective academic writing, the most frequent attributes stated were correct grammar and spelling. Organising ideas, linking ideas, fluency, structure, good introduction and conclusion, preparation and planning, good research , answering the question and defining the topic were considered important attributes. Roles and relationships between a student writer and lecturer as reader were addressed by several students who emphasised effective writing should be - *readable; interesting, colourful* and *entertaining.* Two students identified editing (*review, rewriting)* as important and one the lecturer's explanation of the topic as a factor.

Student descriptions of ways of writing

An analysis of the lexical chains in what students said about how they wrote assignments was used as a technique to revealed the meaningful links they . Main content words are identified as the 'head words' of the explanation. Related content is then clustered around the head. Words may be related through:

1. the same or similar word, eg journals - articles
2. whole / part relationship main, eg ideas- ideas
3. class / sub - class, eg library - index
4. opposites (no example here but hard - difficult)

Categories imposed on head words to group results of the analysis are shown in Figure 2.

topic	process	library	people	things	the writing	time
topic	research					
it	looked	textbooks				
main ideas	went	index				
	looked up	journals				
	read	them				
	talked		friends			
ideas	wrote					
constructivism	thought				notes	
	typed				computer	
	sorted	articles				
		relevant				
	had	15 references				
	looked			criteria		
				sheet		
	looked	quotes				
	formed				the body	
					computer	
	drafted				copy	
					four (drafts)	
	kept					
	going					
	back					
	writing				more	
					conclusion	
	was					last
						thing
	did					
	do				spell check	every
					grammar	time
					check	

Figure 2. Student 1's description of assignment writing

Information shown in Figure 2 shows changes in focus as a student progresses though the writing process, from researching a topic - a stage associated with the library, to writing the assignment- a stage associated with being 'at' the computer. Typically, students used *material processes* focusing on the 'doing' of the assignment. Only one mental process appears, (See 'thought') in student 2's transcript , and reflects the general absence of such references across all of the accounts.

This trend indicates students perceive writing assignments as action oriented. The mental activity involved in analysing a topic, planning a format, length, focus and structure of the presentation, do not appear in their talk. Some of these processes may be implicit in their talk- for example, Student 1 mentioned spel-check/grammar check which is suggestive of a partial editing. However, few were presented during interviews in ways that were made were conscious, deliberate and critical.

If students are to develop as writers, they need to do at least three things. First, they should think about themselves as writers. Second, they should reflect on those things which contribute to effective writing. Third, they should develop an approach that will contribute to the achievement of effective writing. These things need to be addressed explicitly and consciously. To become better at academic writing, students must see effective writing and metacognitive behaviour as mutually dependent.

However, the task for the student remains one of investigation and discovery for universities are generally seen *'as a site for students simply to apply the literacy they are assumed to have gained through their schooling and life experiences, and not as a setting for literacy* development (Nevile, 1996: 39).

Academic Talk

How do academics perceive academic writing?

Responsibility for students' literacy development when they enter tertiary education has been haphazard and resides with the students' ability to recognise what constitutes academic 'D'iscourse (Gee, 1993) or those preferred ways of being within the academic culture (Nevile, 1996).

Some take a strong position on the role universities and lecturering staff should take. For example, Swales & Oliver(as cited in Cartwright 1996: 20) assert, '*to introduce individuals to the academic community means inducting them into the genres and requirements of academic writing.*

This implies a discrete set of skills and abilities which once mastered, will allow one to 'know' how to write for the varying academic discourses. Such involvement iteslf implies the academic community can access, identify and teach those genres and requirements associated with an academic discourse. There are diverse opinions among academics as to the role they should play in the literacy development of their students. This perhaps reflects the diversity of understandings and expertise in literacy. There are also ranging opinions as to what constitutes 'effective' academic writing.

The following analyses offers insights into such diversity. It uncovers assumptions in lecturers' talk about effective academic writing. Category analysis was used to examine how 'effective academic' writing as a topic was constructed in the talk of academics. Their talk was analysed to identify attributes associated with the topic.

Five lecturers were interviewed. Additionally, an email survey produced 30 responses from academics in several universities in Australia. The two transcripts shown here illustrate the different ways lecturers responded to the question, *What are the important features* of effective academic writing?

Category : Students' writing - describing effective writing .	
Explicit attributes	Inferred attributes
The student -	Effective writing is
• understands concepts and issues	
• ability to put these understandings into their own words - using analogies and examples	The student being able to understand / apply / and analyse the issue / identifying own view.
• identify evidence to support their ideas	
• identify own view of the issue	
• express coherent syntactic structures	A product that is coherent and cohesive linking effective paragraphs and proper sentences.
• use sentences and paragraphs	
• linking the sentences and paragraphs	
• recognising the difference between opinion and evidence	Opinion and evidence need to be differentiated,
• able to read the literature and identify the issues and related concepts and	reading the literature and analysing issues
• record them as a compare/contrast ; and/also; either/or -	Using top-level structure (coherence and cohesion).
• able to act on this and resolve conflict of opinion ; recognising there is not one best solution	Conflict of opinions need to be solved but there is not one answer to the problem
• look at a few issues and concepts in depth - quality not quantity	In depth discussion contributes to quality in writing;
• not descriptive but interpretive	description does not.

Figure 3. Lecturer 1: Perceptions of effective academic writing

Lecturer 1 interpreted the question as what it is students must do to achieve effective academic writing. The entire transcript is framed by the opening line *The student..* The following talk accounts for academic writing in terms of *what students must* do rather than describing *what academic writing is*. The inferred attributes locate academic writing as student-centered. They emphasise procedural knowledge over declarative knowledge. Two are repeated: *organising the writing* and *understanding the issues*.

Category : Students' writing - describing effective writing .	
Explicit attributes	Inferred attributes
big problems - · conceptual knowledge · reflection of their high schooling · combination of the subjects · anachronistic teaching · is it a conceptual thing or a cognitive thing · even the more intelligent students may have the cognitive capital but they have a huge leap to make with some terms like multi culturalism. · should be a school subject one exception - · the mature age -usually female - students who have the preparedness to do the hard work and the reading.	High school teaching approaches contribute to the problem Intelligence does not solve the problem; the less-intelligent students do not have the cognitive capital to make the leap with certain terms. School subjects are a problem. Mature age females are not a problem. Young (immature?) students (male?) are not prepared to do the hard work and reading The problem can be fixed by hard work and reading
· understanding the topic · having the knowledge base · read widely · reflect the reading through referencing · organise ideas into sequence · the sequence is introduction and conclusion · mechanics of punctuation, expression, spelling	Good writing is knowing the subject matter (conceptual base) This knowledge is gained through reading This knowledge is substantiated through referencing Good writing is sequenced good writing has correct mechanics

Figure 4. Lecturer 2: Perceptions of effective academic writing

Figure 4 shows how, from the opening clause, Lecturer 2 constructed *academic writing* as problematic. He saw contributing factors as the schools, the conceptual demands of the subject, and the students themselves. Furthermore, several contributing factors are identified in the construction of *good writing*. Declarative and procedural knowledge characterise good writing, with the former gained through reading. For Lecturer 2, *academic writing* is problematic. Problems are associated with student ability and their capacitites to apply procedural and declarative knowledge.

If academic staff are to be shapers of their students' literacy, as Swales & Oliver (cited in Cartwright 1996) suggest, it is important they make assumptions about literacy, students, academics and knowledge explicit and that they determine factors which may influence their pedagogical stances. Let us re-examine Lecturer 2's position :

Textual	**Inter-personal**	**Topical**	**Rheme**
		It	would seem to me
that		the big problems with	
		our first years they	is
that			do not even come in with the rudiments of the
		they	conceptual knowledge
that			might need in order to make some sort of progress
			in the knowledge domain of this subject
		it	's a reflection of their high schooling and the
and			combination of the subjects
		of them	study in Yr 12 and a reflection of the anachronistic
that	most		teaching in such subjects as geography, history
			economics etc.
		They	don't enter the uni with a very good conceptual
			framework of contemporary Australian society.
All of a		we	hit them with a set of concepts / issues / themes
sudden			are crucial to be an effective teacher.
		which	
		I	've never been able to sort out in my mind
whether		it	is a conceptual thing or a cognitive thing
		it	's obviously both
		which	would have contributory challenges
but		we	set challenging basic books
		[challenging, basic	written for first year students - introductory texts;
		books]	
so		one	might expect
that		they	could read, reflect and understand these texts.
		Even the more	
		intelligent students	may have the cognitive capital
but		they	have a huge leap to make with some terms like
			multi culturalism.
		This	should be a school subject
		which	teaches about the world
but		I	love working with the first years
		I	often feel despondent about the knowledge base
that		they	have
and that		I	want to share with them
		One exception - the	
		mature age usually	have the preparedness to do the hard work and the
		female - students who	reading
After		they	had done the exam in April
		I	gave them a feedback sheet
which			locates their level of understanding versus their
			organisation of ideas.

Figure 5: Thematic analysis of Lecturer 2's talk.

A clause may be used as a unit of meaning or *message* (Halliday, 1985; Gerot & Wignell, 1994). By dividing clauses of Lecturer 2's transcript into Theme (*the bones* of what the clause if going to be about) and Rheme, (*the fleshing* out of the clause's meaning), more detailed patterns in the talk emerge.

One of the patterns reveals the dominating textual themes (Column 1), 'that' and 'but' . These terms signal the causative and contrastive structure of much of his talk.

Topical themes (Column 2), indicate the semantic focus of Lecturer 2's talk. Noteably, in this text it is not writing but 'they'.

The referential 'they' and conjunctives 'that' and 'but' combine in the theme position to semantically orient the talk towards students rather than to academic writing and its associated attributes. These elements are found consistently in the theme position of Lecturer 2's talk until the researcher intervenes and reorientates the talk with the question, "What is effective academic writing?".

An Intervention

Data from a study testing the effects of an intervention are not yet available to report. However, the intervention itself may be of interest in that it reflects our view of how assistance might be provided for students in a self-help medium.

The intervention is designed on a platform of " How To's". Students worked their way through a series of exercises, such as:

HOW TO - analyse an assignment topic
know what the lecturer means
plan how to do the assignment
  - how many pages?
  - how many sections?
  - how many paragraphs?
  - starting and ending
  - covering all the points on the topic

HOW TO- organise what they'd decided the topic is about in terms of
  - number of key ideas
  - supporting ides
  - flow of ideas

HOW TO- write like a reader.

Conclusion

The voices of students and academic staff in o ur research have illustrated the problematic nature of academic writing fro many on both sides of the teaching-learning connection in tertiary education. What counts as effective writing, and what and who determines access to forming, collecting and benefiting from our answer remains somewhat mysterious.

We contend that students need to read assignment topics with a sense of analysis, purpose and relation to what they will finally submit as a completed paper- and that lecturers should be aware of such needs, developing competence and confidence in assisting students develop appropriate writing practices.

References

Bakhtin, M. (1986). **Speech Genres and other late essays.** C. Emerson & M. Holquist, Eds). Austin: University of Texas Press.

Bakhtin,M.M.(1981). **The Dialogic Imagination.** Michael Holquist, Ed. Austin University of Texas Press.

Bartlett, B.J. (1978). Top level structure as an organisational strategy for recall of classroom text. Doctoral dissertation, Arizona State University, **Dissertation Abstracts International 39,** 6641A.

Cartwright, P, (1996) Academic Discourse and Student Diversity: Addressing and including the language, voice, and literacy practices of first year undergraduates. In **Australian Literacy Educators' Association Brisbane Conference Procceedings.**

Gee, J. (1993) Critical literacy / socially perceptive literacy: A study of language in action. **Australian Journal of Language and Literacy,** 16, 4 333-55.

Gee, J. 1992. **Social Linguistics and Literacies**. London. Falmer.

Halliday, M.A.K (1985). **An Introduction to Functional Grammar.** London Edward Arnold.

Swales, J.M. 1991. **Genre Analysis:English in Academic and Research Settings.** Cambridge: Cambridge University Press.

Deconstructing the *Australian Language and Literacy Policy*

Helen Beazley

Introduction

Deconstruction is a method of discourse analysis originally formulated by the post-structuralist, Jacques Derrida. His analytical practice, and the practices of others who have adopted Derrida's understanding of the nature of text, offer ways of unsettling the 'common sense' of texts. In other words, the conceptual tools made available through *deconstruction* allow the reader to destabilise assumptions about the nature of knowledge, truth, progress and human agency which are presented in discourse as the only common sense way of understanding the world. For the researcher and practitioner in the field of adult literacy, *deconstruction* offer ways of undermining those assumptions which fix the limits of what can be counted as (il)literacy, (il)literate behaviour, a literacy event, an (il)literate person or literacy education.

The following serves as a basic introduction to the nature and functioning of text as defined by *deconstruction*, and a demonstration of how methods of *deconstruction* can be applied to text using examples from a deconstruction of the *Australian Language and Literacy Policy* as a basis.

I must emphasise that as I attempt to make this presentation 'systematically', 'logically' and with 'clarity', this text in itself, becomes one which post-structuralists would criticise as adopting all those language contrivances which naturalise particular beliefs and assumptions within discourse to give the appearance of 'common sense'. I must also make a few other qualifications: the following analysis represents only one possible reading of *deconstruction* and only one possible way to deconstruct the *Australian Language and Literacy Policy*.

Text and Meaning Making from the Perspective of *Deconstruction*

1. ***Texts try to legitimate particular beliefs as being 'true' and 'certain'.***

Deconstruction is premised on the assumption that texts do not contain 'truth' or 'falsehoods' but only claims to truth, common sense and normality. At the same time as authorising particular meanings as 'true' and 'certain', a text also persuades the reader that any competing constructions of meaning are unscientific, false, marginal, deviant or pathological (Foucault, 1969/1972) and can close off still other meanings as completely unthinkable.

Thus, rather than unearthing through a forensic-like examination 'truth' or 'falsehood' as is the case with many other forms of discourse analysis, the process of *deconstruction* unpacks the claims to truth encountered in the text. In unpacking these 'certainties', *deconstruction* identifies the processes used to legitimate the text's authority as the teller of 'truth' and its attempt to fix one normative certainty.

2. ***The 'certainties' found in text can be linked to discourses.***

The truth claims encountered in text are actually bits and pieces of *discourse*. Discourse, as defined by McLaren (1992), is a set of ''conventions which to a significant extent govern what can be said, by what kinds of speakers, and for what types of imagined audiences'' (p. 320). Thus, a discourse is a set of language rules which allows those who speak the discourse to construct 'reality' in a particular way and rule out other ways of creating meaning. These 'rules are different for different discourses.

Applying this to adult literacy, each adult literacy discourse attaches different, often contradictory beliefs and values to the field of adult literacy, including how adult literacy should be defined, the nature of the adult literacy 'problem', appropriate adult literacy intervention strategies and the nature of the person needing access to these strategies. For example, one adult literacy discourse might say the adult literacy 'problem' is adults with deficient literacy skills while another discourse might define the 'problem' as the inability of the dominant culture to embrace the literacy practices of marginalised adults. The difference in outlook between the two discourses results from the different values and assumptions underpinning each of the discourses.

3. ***Texts try to knit together contradictory meanings and messages arising from different discourses.***

Text are frequently embedded with many contradictory, competing discourses and bits of discourse. Texts attempt to ignore, reconcile or fuse the oppositions among disparate discursive elements in order to stabilise the multiplicity of contradictory 'truths' constructed within a document. Meanwhile, to manufacture 'coherence', other discursive themes may be suppressed or totally discarded.

However, text inevitably fails at producing a seamless logic, and the tools of *deconstruction* can be used to highlight the incompatibilities, tensions and contradictions which result from the text's 'truth telling' project.

The Aim of *Deconstruction*

Given the beliefs about text outlined above, deconstructive analysis attempts to identify and destabilise the truth claims found in text. Lather describes as the aim of *deconstruction* "to keep things in process, to disrupt, to keep the system at play, to set up procedures to continuously demystify the realities we create" (Lather, 1992, p. 120).

In undertaking the task of unsettling text, we can begin to see the violence that can be done to those constructed by particular discourses. An outcome of unpacking particular uses of language and their power to classify, normalise, subordinate and/or silence particular concepts, subject positions and practices, is being able to tentatively explore alternative, perhaps non-hierarchical and non-suppressive ways of formulating meanings and subject positions.

The Text to be Analysed

I selected *Australia's Language: The Australian Language and Literacy Policy: Companion Volume to the Policy Paper* (ALLP) (Dawkins, 1991)[1], as the focus of my research. It represents the first attempt by the Commonwealth Government to (among other things) formulate a comprehensive and cohesive policy aimed at defining the nature of adult literacy, establishing the position of adult literacy policy within the context of Australian society and in relationship to other Commonwealth policy frameworks, and prescribing adult literacy intervention strategies.

The ALLP was released at the end of 1991 when most of the programs implemented under the *National Policy on Languages* and the International Literacy Year had been completed (ALLP, p. v). In terms of its 'shelf life', the ALLP was intended to set strategic directions for the 1990s while establishing a framework for funding for three years from its release (ALLP, p. iii).

Applying Deconstructive Tools to the ALLP - Some Examples

To demonstrate how deconstructive analysis can be used to 'unsettle and shatter' text I have selected three deconstructive tools and examples of their possible application to the ALLP.

1. *Binaries*

My project involved eliciting from the text those binary oppositions which structure the discourses within the ALLP and establish 'certainty' and 'truth' within the text. Derrida considers that the logic and 'common sense' of texts is grounded in the construction of pairs such as nature-culture, masculine-feminine, rational-irrational, speech-writing, presence-absence. Any opposition "of metaphysical concepts...is never the face-to face of two terms, but a hierarchy and an order of subordination" (Derrida, 1991, p. 108). Hence, one part of the pair assumes a privileged position while the other is defined in terms of what it lacks.

Derrida interrogates the exclusionary nature of the hierarchical binary, not to reconcile the opposites or merge them into an organic whole, but to comprehensively undermine the relationship, and the conceptual system from which it emanates. In describing the deconstructive enterprises, Derrida (1991) insists that

> *deconstruction* cannot limit itself or proceed immediately to a neutralization: it must, by means of a double gesture, a double science, a double writing,

---

[1] *The policy document under scrutiny in this project is the Companion Volume to the Policy Information Paper. The companion volume "is a fuller and more detailed statement of language and literacy needs" (p. iii).*

> practice an *overturning* of the classical opposition *and* a general *displacement* of the system. It is only on this condition that *deconstruction* will provide itself the means with which to *intervene* in the field of oppositions that it criticizes (p. 108).

Examples of binary logic at work in the ALLP

Binary logic structures much of the discussion in the ALLP when it comes to defining those individuals considered the appropriate subjects of literacy intervention as opposed to the remainder of the population. One such binary can be described as participant/non-participant.

The ALLP constantly links literacy to participation:

> [An objective for English language and literacy is] achieving appropriate outcomes for both children and adults, so that they can participate effectively in education and training, the workforce and the community (p. 33).
>
> As a means, the ability to read and write English effectively in Australia is ... essential... for participation in all aspects of Australian life (p. 35).

An obvious binary created by tying literacy to effectiveness in public life is the socially responsible, highly achieving, economically productive 'literate' citizen counterpoised with the ineffective, dysfunctional 'other', possibly even the delinquent 'other' who is breaching the social pact of a democratic (and therefore participant-based), literate society. This binary manifests itself in the following reference to literacy in the workplace:

> While there are sectors of the nation attempting to reach the highest levels of achievement in a competitive international market, there are many who have not reached a level of English language or literacy competence which allows them to use their potential (p. 21).

In this passage, those who have fallen short of their "potential" for economically productive citizenship are synonymous with those who have not reached appropriate levels of "language or literacy competence".

Another binary produced by the ALLP is related to personal growth. Language and literacy, including adult literacy, is connected relatively frequently with the "personal" in the ALLP. Most often, the term used is "personal development", for example "literacy also includes the acquisition of strategies for writing, not only for pragmatic purposes, but also for personal development" (p. 35). Other words used in the policy which are prefaced by the term "personal" include: "functions" (p. 8), "growth" (p. 9), "benefit" (p. 9), "welfare" (p. 9), "enrichment" (p. 42) and "experience" (p. 36). The document also links literacy with achieving individual "potential" (p. 41).

This discourse produces a covert binary, where literate adults whose capacity to 'bloom' has been nurtured, are set against those whose growth has been 'stunted' because they have missed out on the opportunity to fully develop through appropriate literacy education. These are the people who have experienced "inadequate literacy development" (p. 39), the people "who have not yet developed effective literacy" (p. 46).

2. Metaphors

Metaphors pervade literary and non-literary texts alike. Through representing the metaphysical in terms of the physical, metaphors simultaneously constitute and constrain meaning, enrich concepts and attempt to eliminate other ways of conceptualising. For example discussing 'debate' in terms of war (e.g., defending or attacking a position, winning or losing an argument) positions participants as 'enemies' rather than partners in meaning making, using maternal metaphors for nature (e.g., mother nature) shifts the focus off the predatorial aspects of the natural world, and describing time as a commodity (e.g., wasting time, give me some time) ties time to capitalist notions of production and exchange.

While metaphors can be overt and deliberate, frequently metaphors are so naturalised in language that it is difficult to recognise them as figurative language. Instead, they seem to represent a common sense view of the world. Barton (1994) addresses the way metaphors effect common sense understandings of literacy, contending that "different metaphors have different implications for how we view literacy, what action might be taken to change it and how we characterise the people involved" (p. 12). The deconstructive process brings these buried metaphors to the surface, shows how they shape and shift the meaning of binaries and attempts to disrupt their 'common sense'.

Examples of metaphors at work in the ALLP

Many metaphors in the ALLP are drawn from the world of manufacturing and commodity exchange in defining the context and aims of the policy. For example, people are referred to as "Australia's best resources" (p. 3) and "human resources" (pp. xiv, 12, 23) whom advanced economies should 'invest' in (p. 23) and whose contribution should be "maximised" (p. xiv). This metaphor is applied even when the context is not specifically related to the role of people in the production process:

> Language and literacy policies are essential to maximise the contribution of Australia's human resources to national development in education, the workplace and the broader community (p. xiv).

This factory-centric discursive construct serves to objectify (and consequently de-humanise) humans as production inputs sharing common characteristics with other exploitable inputs, classically defined as land, raw materials and capital. They have a value which can be quantified, they can be subjected to value-adding processes (through development of literacy skills for example) and they serve a purposeful end, whether that end be defined economically or socially.

Other illustrations of the persistent economisation of language within the text include referring to literacy as "skills", imagining teacher education in terms of developing "infrastructure" to ensure teacher "supply" (p. 34) and positioning business as "users of the products of education and training systems" (p. 30) who will buy training if the products represent "value for money" (p. 31).

The "skills" metaphor locates individuals at a particular point along the skills 'spectrum', positioning particular individuals as those who 'lack'. On a few occasions, the policy defines the subject as totally lacking, usually in relation to functional literacy [italics added], for example:[2]

> the significant numbers of people *who do not have* functional literacy skills for contemporary society (p. 42).
>
> the people *who do not have* the functional literacies expected for everyday life in Australia (p. 42).

More often though, a partial lack is identified [italics added], for example:

> workers who *do not have sufficient* oral or written English (p. 22).
>
> workers with *inadequate* English language and literacy skills (p. 14).
>
> the *gap* between these [literacy] needs and the levels of literacy attained by many Australians (p. 3).

By conceptualising literacy as "skills", literacy can be regarded as residing in, and even separable from, the individual, divisible into levels and therefore conducive to measurement through individual testing. Thus, those who 'lack' can have their 'lack' quantified and are consequently constructed as those who 'fail', those whose performance is below average, those who do not exhibit acceptable levels of achievement.

3. *Silences of Meaning*

Another technique used in deconstruction is to identify *silences* in text. Misson (1994) argues that "it is not a matter simply of only certain things selected for inclusion while still implying the rest, but of certain things being silenced, and the reader being expected not to notice the absence" (p. 11). This notion is also reflected by Gee (1994): "Discourses only 'tell' truths from their own perspectives and they always 'hide' truths that are 'told' by other competing discourses" (p. 5).

When meanings are silenced in the ALLP

The ALLP to some extent recognises that there is other than 'standard' English language practices in Australia and yet attempts to silence these practices, as the following passage demonstrates.

---

[2] *According to the ALLP's definitional system, having no functional literacy skills does not equate to having no literacy skills as the document endorses the concept of basic literacy skills, defined as possessing minimal reading and severely limited writing abilities (pp. 34-35).*

> *Standard Australian English is the form of English associated with public affairs in Australia. The status of English as Australia's defacto official language is evident in its use as the language of the Commonwealth, State and Territory parliaments, and as the language of Australian law. The NPL (Lo Bianco, 1987: 71-72) acknowledged English as the primary and dominant language of education, administration and commerce, the dominant language of the media, of the dissemination of information and the delivery of services, the common language of public life and the main language in which speakers of other first languages communicate with each other. Mastery of English facilitates effective participation in Australian public life and democratic processes.*
>
> *Australian English is integral to Australian identity. It is the vehicle for mainstream Australian culture. Being proficient in Australian English is essential for effective functioning in the community and the workplace. A key message of this policy is that Australian English must be accessible to and accessed by all Australians. However, the pre-eminent status of English in Australia does not signify any constitutional or legal restriction on the use as appropriate of other languages. Indeed, in line with our commitment to multiculturalism, other languages are used for many purposes and in many contexts...*

In this passage "Standard Australian English" is defined as "the form of English associated with public affairs in Australia" (p. 32) while different varieties are subordinated as deviations to the standard by taking on the negative or lacking form of the positive term in being named "non" standard in other parts of the document. However, the modifier "standard" slips from the texture of the document shortly after it is introduced and only re-emerges when a distinction is to be made between "standard" and "non-standard". In the passage above, the term "Standard Australian English" begins the section but in the rest of the section the word "standard" is dropped, to the extent that "Australian English" rather than "Standard' Australian English" signifies "the vehicle for mainstream Australian culture" (p. 32). By making 'standard' invisible, English and 'Standard English' become substitutes for each other, displacing and effectively rendering invisible other "varieties" of English for much of the document.

Concluding Comments

You can see from these examples how *deconstruction* shows the way in which particular meanings can be foregrounded as common sense, and other meanings marginalised and still others silenced. This particular selection of analytical tools used in *deconstruction* also demonstrates the way discourses contest each other in order to dominate meanings constructed within text and the resultant inconsistencies in what appears to be an integrated, logical and transparent document.

So what implications can *deconstruction* have for the work we do? *Deconstruction* can assist practitioners in the adult literacy field to identify the

mixed messages received through various policy, procedural and curriculum documents that they encounter, with this deconstruction of the ALLP serving as an example of how such texts can hold together conflicting stories about literacy. Awareness of this dynamic contest among adult literacy discourses ensures that theorists, researchers and adult literacy practitioners can more easily observe the partiality and metaphoricity of each discourse. These stakeholders can then move among and work to sustain, resist or modify particular meanings attributed to adult (il)literacy so that those accessing adult literacy services can be positioned as positively as possible within local contingencies and the historical moment.

References

Barton, D. (1994). *Literacy: An introduction to the ecology of written language.* Oxford: Blackwell Publishers.

Dawkins, J. (1991). *Australia's language: The Australian literacy and language policy: Policy information paper.* Canberra: AGPS.

Dawkins, J. (1991). *Australia's language: The Australian literacy and language policy: Companion volume to the policy paper.* Canberra: AGPS.

Derrida, J. (1991). Signature event context (A. Bass, Trans.). In P. Kamuf (Ed.), *A Derrida reader: Beyond the blinds.* (pp. 80-111). Hertfordshire: Harvester Wheatsheaf.

Ellsworth, E. (1989). Why doesn't this feel empowering? Working through the repressive myths of critical pedagogy. *Harvard Educational Review, 59* (3) 297-324.

Foucault, M. (1972). *The archaeology of knowledge* (A. M. Sheridan-Smith, Trans.). London :Tavistock Publications. (Original work published 1969)

Gee, J. (1994). Quality, science and the lifeworld: The alignment of business and education. *Focus no. 4: Occasional papers in adult basic education.* Sydney: ALBSAC.

Lather, P. (1992). Post critical pedagogies: A feminist reading. In C. Luke & J. Gore (Eds.), *Feminism and critical pedagogy* (pp. 120-137). London: Routledge.

Levine, K. (1986). *The social context of literacy.* London: Routledge & Kegan Paul.

McLaren, P. (1992). Literacy research and the postmodern turn: Cautions from the margins. In R. Beach, J. L. Green, M. L. Kamil & T. Shanahan (Eds.), *Multidisciplinary perspectives on literacy research* (pp. 319-339). USA: National Conference on Research in English and the National Council of Teachers of English.

Misson, R. (1994). *A brief introduction to literary theory.* (Available from the Victorian Association for the Teaching of English)

Comparing Content-centred and Learner-centred Approaches in School Mathematics: Picking up the Pieces in Numeracy with Adults

Jennie Bickmore- Brand

ABSTRACT

This paper presents some of the results of a classroom based research study which investigated teachers with different emphases in their methodology. One teacher believed that preparation for higher mathematical studies was a priority which encouraged her to have a content-centred approach. The other teacher believed that mathematics should be relevant to the students' lives and her approach was learner-centred. The advantages and disadvantages of these methodologies have been explored through the voices of their students and other adult literacy/numeracy students reflecting on their schooling.

As a lecturer of tertiary students from all around Australia, studying for their Post Graduate Diploma in Adult Literacy and Numeracy, I recently had cause to mark an assignment that asked them to reflect upon their early school mathematics learning experiences. Of the sixty students, only four described these formative years of their life as containing positive memories of mathematics learning situations. One student, Angela captures what was a common theme:

> *Angela: A popular topic of conversation between friends during my high school years related to the 'irrelevance' of many of the maths topics. It was often hard to maintain interest for concepts that seemed so abstract with little relevance to our everyday life. Topics like trigonometry, algebra and many other topics were taught as isolated sets of skills which often left us wondering where they fit into the world. Why were they used? How could they ever be used? Where might they be useful in the future. These questions were never answered. Unfortunately, even the topics which were relevant to us eg. percentages, metric system, were often taught in the same detached from real life manner. The closest we usually got to making a connection to real life was when the mathematical concept was put into the "problems" format, generally straight from the textbook.*

While this may reflect the school experiences of adults who have long since left such educational institutions it still begs the question as to why, presumably well-meaning teachers, produced such poor attitudes among their pupils in regard to mathematics. A doctoral research investigation into this question has, I believe generated some answers to this, and to why, even today, students are still exiting their schooling with the same attitude as Angela's.

The study investigated two teachers with a different emphasis in their methodology. One teacher believed that preparation for higher mathematical studies was a priority which encouraged her to have a content-centred approach. The other teacher believed that mathematics should be relevant to the students' lives and her approach was learner-centred. Both teachers were committed to developing the content set out in the Western Australian Syllabus for their year level. As teachers of upper primary students, both teachers were aware of the need to prepare their students for secondary education. As will be seen, both teachers developed different "by-products" as it were in their students by the end of their year with them.

Context[i]

The way in which information is presented in a teaching/learning situation can assist or detract students from making meaning. Mousley (1990) stresses that in order to understand the integration of mathematical concepts it will assist students if the problems used in classroom mathematics are drawn out of students' day to day lives, so they can make appropriate links. "It seems a pity that studies of ratio, proportion and similar shapes are frequently abstracted away from the reality of our students' lives" (p. 39). Lemke (1987) states that meaning-making is interdependent on the social practices of the community within which it is embedded. If language is the most social of human activities and is currently a necessary medium for communication in human society, then it would seem inevitable that the knowledge, skills and values of the classroom will be packaged within the social practices of that classroom.

Schools are environments which are designed intentionally to promote certain knowledge and with it norms and certain social knowledge (Nesher, 1988). Nesher (1988) expressed her concern about the lack of transferability of school mathematics into the real world of the student. She decries the proportion of school time a student spends doing "exercises that do not teach him anything" (p. 72). Anderson (1990) remarked, "Do we intentionally mislead or confuse our students by failing to include meaningful context or by presenting mathematical models as reality?" (p. 327).

Although the current literature informing the field of mathematics education is seemingly on line with creating a meaningful context for the development of knowledge skills and values, teachers interpret this quite variously when it comes to their own practice. The teachers in this study interpreted the idea of context quite differently.

The content-centred teacher, Michelle, segmented the learning into blocks, for example on Mondays she might have measurement activities, Tuesday- space, Wednesday- number, Thursday- problem-solving and so on. In this classroom I observed students having difficulty, on more than one occasion, when topics changed so frequently, and they had to work out the purpose of the activity, in terms of which mathematical skills they were required to bring to bear on the problem. Michelle's response suggested that it was just part of school life and that "***most kids get around it***". I questioned her as to the possible restriction using a textbook might have on how a topic may develop.

> *Teacher Michelle:* ***Its a text that covers a lot of content, and you find you don't need to deviate... we wanted a text that we could continue through the years... we wanted continuity through the grades. .. I do like to use a textbook... I think textbooks are important... it keeps you on track.***

Michelle's priority was clearly getting through a curriculum which she saw as her responsibility as a teacher. Angela, my tertiary student recalls her memory of such an approach:

> *Angela:* ***There was only one repertoire in this classroom. "Open you textbook, follows the example on the board (maybe he would complete another one if we looked vague enough) then complete the exercise on your own."***
>
> ***There was often not enough time to consolidate on the topics we had been taught. We seemed to move quickly through each topic and it was easy to get left behind and never really catch up again. We were expected to master each topic at the same rate regardless of how easy or difficult we might have found the task.***

Inspite of the frequent topic changes Michelle believed in using a real world context within each lesson, to which she thought the students would be able to relate. Here is an example of a revision lesson:

> ***Mr Fivemore is a very eccentric old man. He is crazy about the number 5. Everything in his life has something to do with the number 5. For example he has 5 cats and 5 dogs and 5 sons and 5 daughters and 5 bank accounts etc.***
>
> ***1. If Mr Fivemore has $50.00 in each of his back accounts how much money does he have altogether?***
>
> ***2. If Mr Fivemore has a five-sided house, and there are five windows on each side of the house, measuring 1m wide and 2m high, how many square metres of curtain material would he need?***
>
> ***3. If each cat had five kittens each year. How many kittens will there be after 5 years?***

Those of you working with adults would no doubt dispense with the "pretend" Mr Fivemore and use a real world context in order to revise concepts. Even if you did use Mr Fivemore, I suspect you would be considering real world variables, like ensuring you have twice your width when making curtains, and working through the health, sex, season and mating habits of cats etc. It won't however surprise you to know that these students were not to concern themselves with such things, after all it was just a "school" exercise. As Maier (1991) suggests "they are school problems coated with a thin veneer of 'realworld' associations. The mathematics involved in solving them is school mathematics, of little use anywhere but in school." (p. 63)

At the end of the twelve-month observation period, I asked the students in this class ***"What do you think you have learned that will be useful for everyday life?"*** Many of the class related the value of what they were learning to shopping, or being able to do well in high school.

> ***Carrie: I'd be able to work things out at the shops and if I got a job where I had to add up money, I'd be able to do that. And if I had to share it out as well, pay and that, and I'd be a lot better with cooking.***

Most of the students in this class could not see how, what they were learning, would assist them in everyday life.

> ***Georgia: I don't think that there's that much we'll learn that we'll use in everyday life, I just think you really have to know the basics, but it might still be good, you know just in case, you know, if you wanted to go on to university or something like that.***
>
> ***Elizabeth: Well I do think that some things are irrelevant. I can remember sitting in class and thinking when are we going to use this.***

My adult learners expressed the same concerns as the students in Michelle's class:

> ***Vivian: I don't ever remember being given a realistic example of where or when I could utilise the mathematical processes I was learning.***
>
> ***Johnathon: Many of us learnt because we had to, we needed the skills to complete the assignments and tests to gain a good grade. A grade we needed, to enable us to participate in higher units of study. A need to gain skills and prowess in what seemed, and sometimes still does seem, a subject full of skills aimed at merely learning more skills you will never use in life except in the mathematics classroom.***
>
> ***Martha: Repetitive drills, devoid of realism, and only designed to prepare students for tests are hopefully gone for ever.***

When I shared the responses of her students with Michelle, she acknowledged that although this may well have been the case, her goal was not altered.

> ***Teacher Michelle: I think they need a basic understanding of our number system, numeration. I think they need to know how to add, subtract, multiply and divide and have a real***

> ***understanding as I said, before, they can't go onto high school maths if they haven't got their basic understanding.***

The learner-centred teacher, Lyn, believed in teaching within a context that was relevant and meaningful to the students. She programmed the same knowledge, skills and or values from the Western Australian Syllabus, as Michelle, but within large topics or themes. For example the students planned the most cost efficient route and form of transport to their class campsite, some 250kms away. This involved the students working out scales, reading maps, finding averages, reading timetables, investigating available and preferred forms of transport, not to mention a whole range of the basic mathematical and literacy processes, over an 8-week period working for 4 days per week from 9.00am to 10.30 am.
The students were clear about the value of their classroom learning experiences for their own lives as can be seen when they were interviewed and asked:- ***"What do you think you have learned that will be useful for everyday life?"*** The class displayed a variety of answers to this question that indicated an individual and quite personal value of what they were learning to their own lives.

> ***Ben: We've learnt to take care of our problems and that.***
>
> ***Paul: Don't take things for face value... just don't rush... find out how to do it before you try to do it. Well, a lot of the things that she did were, they were sort of, they had two meanings, they had a top, a surface meaning and then a lower meaning.***
>
> ***Dean: I've learned how to not get ripped off at the shops.***
>
> ***Melissa: I've learned how to make my own way around the country using public transport***

One of my adult learners expresses his delight when, as an adult he was placed in a classroom where he was able to contextualise the concepts he was being exposed to:

> ***Richard: I attended a Technical College one day a week and discovered trade "maths" and became an A grade student once again. There was a clear cut purpose for everything. At work we used the theory we learnt at "tech" coupled with the experience available on the shop floor.***

As a result of the two class teachers' approaches in this study, the students received quite different messages from each teacher about the relationship between the school mathematics and their own everyday lives. The results from a standardised test given to both classes revealed no significant advantage or disadvantage to either class due to their teacher's style. What was encouraging however was the ability of the students in the learner-centred class to perform on the test when it was unlike their daily mathematical routines. It would seem that they had learned that mathematics was relevant for their lives and yet they were able to perform on an "objective" test. There was, however, one test item that no student in this learner-centred class of Lyn's managed to score correctly:-***Find the product of 1/2 and 1/3.***

It would appear from this example that these students had been disadvantaged in regard to this specific language of mathematics. This may have been as a result of Lyn's priority to contextualise the content into everyday situations with less regard for the register in which mathematicians operate and in which her students will need to function if they are to succeed in higher mathematical studies. (For further reading into the differences in how each teacher developed the mathematical language of their students see- Bickmore-Brand, J. 1995, What difference can a language teacher make when teaching mathematics? *Fine Print*, Summer, 21-25. This explores two of the Bickmore-Brand Principles of Teaching and Learning, namely- Scaffolding and Metacognition, and therefore will not be dealt with in this paper).

The by-product of believing that what you are learning in mathematics at school, is an integral part of your own life, seems to be possible within a learner-centred classroom, where the learning is contextualised around content that is relevant and meaningful to the students.

Responsibility

The idea of enabling learners to take responsibility for their own learning is not new to adult education. For many it would seem to be one of the distinguishing differences between school and post-compulsory education. However, certain writers have been talking about responsibility at all levels of education Holt (1964) and Rogers (1961). More recently, Cambourne (1988), Holdaway (1986), and Smith (1988) have been reminding teachers that it is ultimately the learners who choose to take on board the knowledge, skills and/or values they are taught.

Giving learners responsibility for their learning is not to suggest that they are left stranded or running amok in our classrooms, but that they will gradually be in a position to accept increasing responsibility for the curriculum. In our adult education classrooms, I believe that assistance, to gradually accept responsibility is a reality, especially for some of our less independent learners.

The issue of not choosing to accept responsibility, can have its roots in a schooling system that does not encourage the development of the skills of responsibility. Rarely in schools is there any real consequences for the decisions that students make on a daily basis. In the example from this study, the learner-centred class obviously had genuine ramifications for their processing; any miscalculations could be costly and place the trip under jeopardy. On another occasion the students in this class had to draw to scale the layouts for the school groundsman for marking up their school oval for a Mini Olympics Sport Carnival. Once again a tangible consequence was evident for any mathematical calculations.

In the content-centred classroom the main consequence for any miscalculations was a lower assessment score. The classroom dynamics were such that students did indeed have to accept responsibility for showing to the teacher that they knew the knowledge that was valued in that classroom. Two adult learners reflected upon this form of schooling:

> ***Geoff:* My success at this level came from mastering key concepts and types of mathematical calculation and having plenty of practice in class and homework, with regular tests to provide the motivation to perform.**
>
> ***Susan:* When I reflected on this, I realised that it was very much hit and miss, whether or not you understood the theory...... I realised, like many adult learners, I had "trust[ed] implicitly processes [I] did not understand" (Willis, 1989, p. 76).**

Strasser, Barr, Evans and Wolf (1991) raise concerns that the vocational training that seems to dominate current adult education tends to take an instrumental (Skemp, 1976) view of understanding mathematics. The emphasis on competencies has developed into the development of "closed" skill competencies in order to function in a job, without attention to understanding the rules behind the skills. I would argue that without that understanding it is presumptuous to expect that the worker should be in any position to legitimately accept responsibility for their mathematical processing.

Angela discusses this issue of responsibility:

> ***Angela:* Past teachers had seemed very aloof about our progress, as if we were totally responsible for our difficulties.**

It cannot be assumed that learners will be able to become independent learners independently. The diagram below illustrates that there must be a gradual release of responsibility by the teacher/ mentor/ expert. This will be after opportunity has been given for practice by the learner and probably teacher support in the form of joint construction (Campione, in Cazden, 1988) and modelling. It is this modelling that I wish to turn to at this point.

The gradual release of responsibility model of instruction

Proportion of responsibility for task completion

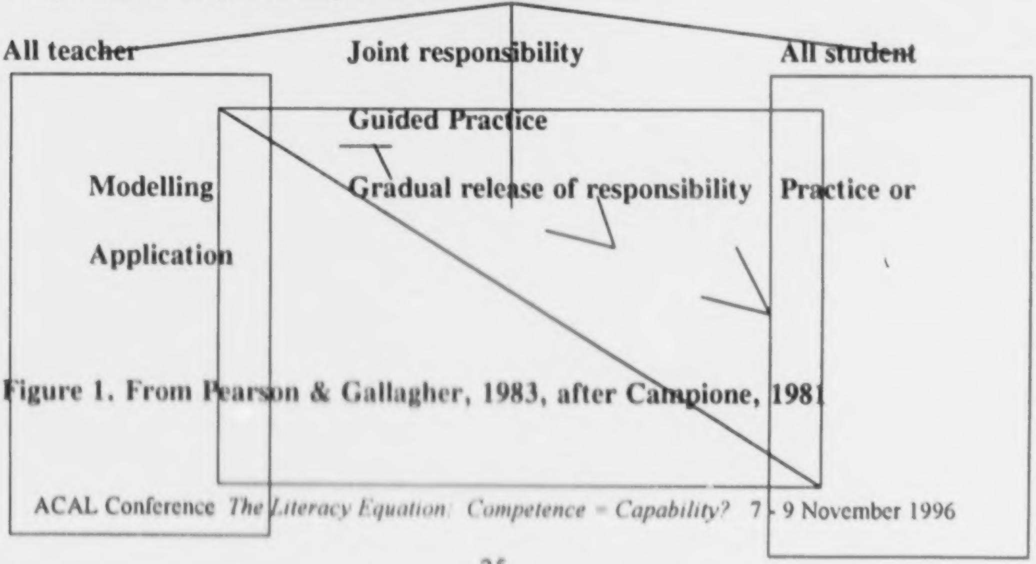


Figure 1. From Pearson & Gallagher, 1983, after Campione, 1981

Modelling

This teaching/learning principle focuses on the influence people whom we admire can have over us to a point where we try to emulate them (Combs, 1962; Jourard, 1964). Those of you who work with adults would be familiar with workplace trends to set apprentices up with a mentor or "buddy" while they are still learning. Here they are placed alongside the "expert" who models and assists the learner where necessary. The effectiveness of this relationship can be enhanced when the mentor uses scaffolding strategies (Vygotsky, 1962, 1978; Palincsar & Brown, 1989. See also Bickmore-Brand, *Fine Print*, Summer, 1995).

A large body of research (Barsalou, 1992; Bereiter, & Scardamalia, 1993; Heath, 1983; Street, 1984) suggests that learners will be advantaged when they are participants alongside people who are engaged in authentic use of the skills they themselves are desiring to master. Unlike so many school situations, what is being suggested is that students are involved in "situated practice" where the skills are embedded within a real context being modelled by an "expert" or mentor. The infrequency of such a connection is recalled by one of my adult students who actually did come across a "model" using a skill she had been unsuccessfully trying to make sense of:

> ***Jette: There was this triangle and you had to prove it was there. Why? Anybody could see it, so why bother? When it was suggested to me that geometry would be useful to me in later life, I took no notice and did not think it would matter. I was right. The only use I ever had for any geometry term was when studying the battles of Alexander the Great, he liked to use oblique angles when going into battle.***

Sharing even our amateur efforts with "significant" mentors establishes a valuing of the skill/knowledge/and or attitude. There is an identity and belonging that builds up when we participate with a group who jointly share and value mastery by all its members (Holdaway, 1979).

The kind of model each teacher provided in the Phd study was revealed when I asked each of the students the question ***"Do you think your teacher uses mathematics in her everyday life?"*** The majority of answers in the content-centred class of Michelle's were to do with using mathematics to go shopping and because she was their mathematics teacher. There was one exception to this line of answer:-

> ***Elizabeth: I don't know. But she's a very mathematical person! She probably would say, "I wonder how many tiles (carpet) there are on this floor?" Or, "I wonder how many bricks are on that wall over there."***

Although the students in Lyn's learner-centred classroom also believed their teacher would need to use mathematics to go shopping, and because she was their mathematics teacher, they provided quite detailed responses that revealed that Lyn had communicated the value of mathematics in her own life quite effectively.

> ***Chris (male): She does sewing and she needs to know how long the material needs to be***
>
> ***Matthew: Adding up for games, like tennis. Mrs M does the fixtures for our tennis teams.***
>
> ***Tim: Like when she's going to America now, she has to work out how much it will cost and how much money she's got, especially with exchange rates...***
>
> ***Louise: If she has toast in the morning, whether she has enough butter left. And, milk and stuff, how much she'll need to cook with.***

I recall asking (content-centred) Michelle's headmistress, what selection criteria she uses when choosing new staff. She said of the junior school that she liked to have staff who were "on about the basics... skills development". But for her senior staff, she chooses "eccentrics". If they are to be a history teacher then she wants them to be passionate about history, if it is computing, to be passionate about computing etc. Here was an experienced teacher and mother, who knew that adolescents no longer find their teachers someone to cling to with affectionate loyalty. No, the secondary students had other idols. What she could see was that although secondary teachers might not become the student's friends they could be someone the adolescent respected for their drive and commitment to their field and its effect on their life. A tall order, but one in which even as teachers of adults, it is never too late to demonstrate that passion which in all likelihood, was what drew us to the discipline in the first place.

Community

The ideas contained in this teaching/learning principle refer to the roles and relationships in the classroom. The messages that students receive about the subject and their involvement in it come through the classroom organisation and the learning environment each teacher establishes, as these comments by the adult students reveal:

> ***Joanne: There was never any discussion, and the lesson was given with "chalk" but no "talk". Each student worked on their own, completing a series of repetitious exercises in the hope that they would sooner than later grasp the idea. Any classroom chatting meant we were cheating.***
>
> ***Lesle: The scene was humiliating for me as it was such a public exposure of my ability to grasp the maths situation. I was fearful of the teacher's impatience and this led to heightened uncertainty. I became too scared to "have a go" in case of error. A lengthy queue awaited the end of my consultation with the teacher. They needed their work marked in order to begin the next problems. Their***

> ***impatience compounded the teacher's frustrations causing me to become extremely edgy.***
>
> *Vivian:* ***Seating all facing the front assumes you can only learn from the teacher. When teaching adults I like them to discover what they can learn from one another and also, that I, the teacher can learn from them too.***

Many writers have described the benefits of belonging to a community of learners (Barsalou, 1992, Bereiter & Scardamalia, 1993; Gee, 1992; Heath, 1983; Wells, 1981). By creating a community atmosphere in a classroom, the learner may be in a position to share problems and successes with other members of the group (Boomer, 1988; Cairney, 1987). In adult learning situations where individualised programs are often in use this idea becomes quite significant. A shared context is important, for example, in making "public" what Barrett (1985) talks about as "private" or personal knowledge (Pimm, 1987 refers to this as "talking for oneself" and "talking for others").

A teacher who creates and encourages a shared context is going to be in a better position to select appropriate materials and instructional procedures (Burnes & Page, 1985). A shared context helps to reduce the distance between what learners bring with them to the classroom and the content of what is being taught. The classroom climate that the teacher sets up will not only reflect what the teacher knows about the subject, but what s/he believes about how students learn and how that subject should be taught (Lubinski, Thornton, Heyl, & Klass, 1994).

In the two classes from the Phd study the students were asked ***"Who do you go to for help during mathematics?"*** in an attempt to investigate the kind of learning community each teacher had created. The results were translated onto this sociogram (See Figure 2)

Figure 2. Who do you go to for help during mathematics classes?

The sociogram indicates that the students in the content-centred classroom mainly sought their teacher for assistance. It showed an establishment of "expertise" with the teacher alone. Michelle when interviewed about her teaching, expressed an ambivalence about what might happen when you allow a more learner-centred classroom dynamic.

> ***Teacher Michelle: They need it (the content) before high school, and just like language short-sold punctuation and grammar skills, with this whole language approach, I am not going to let the skills go by in maths. Yes, I am really trying to work with more group learning, I am very aware that children need to talk about these and to become more relaxed in their discussions and talk with each other and I am trying to develop that more in my room. It doesn't tend to happen terribly well.***

The majority of students in Lyn's (learner-centred) class responded with a qualifying statement to the question "Who do you go to for help in mathematics classrooms:- ***"Well it depends..."*** Their answers indicated that there was a range of expertise in their classroom from which they could draw:

> ***Paul: ....If you wanted a graph done you would go to Stephen***
> ***Dean: If you needed something added up quickly, you could go to Melanie***
> ***Victoria: Melissa's really good at explaining things.***

Lyn was quite clear about the kind of community environment she was trying to establish with her class. Although a great deal is said about adult learning situations being quite different I believe Lyn's class appears to be the kind of class we would want for our adult learners.:

> ***Teacher Lyn: By being in a meaningful context... visually, orally... making approximations, taking risks... Setting up an environment where children do not feel threatened that there is going to be any sort of failure. That whatever their opinions, they are going to be valued, and that they all have worthy contributions to make. And that the teacher is not the overall "expert". The teacher is really the facilitator and not the person who says "thou shalt do" type of thing. And the children take responsibility for their own learning and are independent as well as the very strong notion of -you cannot do it in isolation, that cooperative, that group support, both from your peers, your teachers and all those sort of factors go together then.***

Perhaps if our adult learners had had this kind of teaching environment they may not be in our numeracy classes today?

Conclusion

It can be seen from the two classrooms in this study that each teacher held different goals for their students and this in turn had different effects on how they presented the syllabus and the learning environment they created. The comments by the students reveal a difference in the outcomes from their point of view. As previously mentioned, the results of testing showed no performance advantage through having been in either teacher's classroom. Neither was there any difference in how much the students enjoyed doing mathematics as a subject in either teacher's classroom. It is not until you overlay the comments by the adult students that it can be revealed that Michelle's teaching style is about preparing students for higher mathematical learning, and Lyn's about preparing students for life.

Afterword

The author wishes to thank the adult students whose comments have been transcribed in this paper. The full results of this study will be published in a Phd thesis. Please contact Jennie Bickmore-Brand for details Fax: 09 272 3805 E-mail **rbickmor@cc.curtin.edu.au**

Bibliography

Barrett, G. (1985). Structure of knowledge and the learner: an examination of cognitive learning skills, learning situations and knowledge. *Cambridge Journal of Education 15*(2).

Barsalou, L. W. (1992). *Cognitive psychology: An overview for cognitive scientists.* Hillsdale, New Jersey: Lawrence Erlbaum.

Bereiter, C., & Scardamalia, M. (1993). *Surpassing ourselves: A inquiry into the nature and implications of expertise.* Chicago: Open Court.

Bickmore-Brand, J. (1995). What difference can a language teacher make when teaching mathematics? *Fine Print,* Summer, 21-25.

Boomer, G. (1988). From catechism to communication: Language learning and mathematics. *Australian Mathematics Teacher 42*(1) April.

Burnes, D., & Page, G. (1985). *Insights and strategies for teaching reading.* Australia: Harcourt Brace Jovanovich.

Cairney, T. (1987). The social foundations of literacy. *Australian Journal of Reading 10*(2), June.

Cambourne, B. (1988). *The whole story: Natural learning and the acquisition of literacy in the classroom.* Auckland, NZ: Ashton Scholastic.

Cazden, C. (1988). *Classroom discourse: the language of teaching and learning.* Heinemann Educational, Portsmouth.

Combs, A. W. (Ed.) (1962). *Perceiving, behaving, becoming.* Association for Supervision and Curriculum Development.

Gee, J. P. (1992). *The social mind: Language and ideology, and social practice.* New York: Bergin & Garvey.

Heath, S. B. (1983). *Ways with words: Language , life, and work in communities and clssrooms.* Cambridge: Cambridge University Press.

Holdaway, D. (1979) *Foundations of literacy.* Sydney: Ashton Scholastic.

Holdaway, D. (1986). The structure of natural learning as a basis for literacy instruction . In M. Sampson (Ed.), *The pursuit of literacy.* Dubuque, Iowa: Kendall/Hunt.

Holt, J. (1964). *How children fail.* New York: Dell

Jourard, S. M. (1964). *The transparent self.* Van Nostrand Paperbacks.

Lemke, J. L. (1987). Social Semiotics and science education. *The American Journal of Semiotics, 5*(2), 217-232.

Lubinski, C. A., Thornton, C. A., Heyl, B. S. & Klass, P. H. (1994).Levels of introspection in mathematics instruction. *Mathematics Education Research Journal 6*(2), 113-130.

Maier, E. (1991). Folk mathematics. *School mathematics and work.* Falmer Press: Hampshire.

Mousley, J. (1990b). Chaos in the VCE. In K. Clements (Ed.), *Whither Mathematics?*, Melbourne: Mathematical Association of Victoria, pp. 39-43.

Nesher, P. (1988). Beyond constructivism: Learning mathematics at school. In *Twelfth Annual Conference of the International Group for the Psychology of Mathematics Education Proceedings.* Hungary 20-25 July, pp. 54-74.

Palincsar, A., & Brown, A. (1989). Classroom dialogues to promote self-regulated comprehension. In J. Brophy (Ed.), *Advances in research on teaching* (Vol. 1, pp. 35-71). Greenwich, CT: JAI Press.

Pimm, D. (1987). *Speaking Mathematically: Communication in Mathematics Classrooms.* London. Routledge.

Rogers, C. R. (1961) *On becoming a person.* Boston: Houghton & Mifflin.

Smith, F. (1988). *Joining the literacy club: Further essays into education.* London: Heinemann Educational Books Inc.

Skemp, R. R. (1976). Relational Understanding and Instrumental Understanding. *Mathematics Teacher, (77)*, 20-26.

Strasser, R., Barr, G., Evans, J., & Wolf, A. (1991). Skills versus understanding. In E. Maier, Folk mathematics. *School mathematics and work.* Falmer Press: Hampshire.

Street, B. (1984). *Literacy in theory and practice.* Cambridge University Press Cambridge.

Vygotsky, L. S. (1962). *Thought and Language.* Massachusetts: Massachusetts Institute of Technology Press.

Vygotsky, L. S. (1978). *Mind in Society: the development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wells, G. (Ed.) (1981). *Learning through interaction: The study of language development.* New Rochelle N. Y.: Cambridge University.

Willis, S. (1989). *"Real girls don't do maths": Gender and the construction of privilege.* Geelong: Deakin University.

---

[1] In an attempt to investigate the advantages and disadvantages of each teacher's approach the seven Bickmore-Brand Principles of Teaching and Learning (1993) were used to sort the data collected from a twelve month qualitative study in two upper primary teachers' classrooms. The following is a summary of the key ideas behind each principle. (For a more detailed reading see Bickmore-Brand (1993) in Stephens, Waywood, Clarke & Izard, *Communicating Mathematics: Perspectives from Classroom Practice and Current Research*, Australian Council for Educational Research Australian Association of Mathematics Teaching, Melbourne).

Bickmore-Brand Principles of Teaching & Learning

Context - creating a meaningful and relevant context for the development of knowledge, skills and values

Interest - realising the starting point for learning must be from the knowledge, skills and/or values base of the learner

Scaffolding - challenging learners to go beyond their current thinking, continually increasing their capacities

Metacognition - making explicit the learning processes which are occurring in the learning environment

Modelling - providing opportunities to see the knowledge, skills and/or values in operation by a "significant" person

Responsibility - developing in learners the capacity to accept increasingly more responsibility for their learning

Community - creating a supportive learning environment where learners feel free to take risks and be part of a shared context

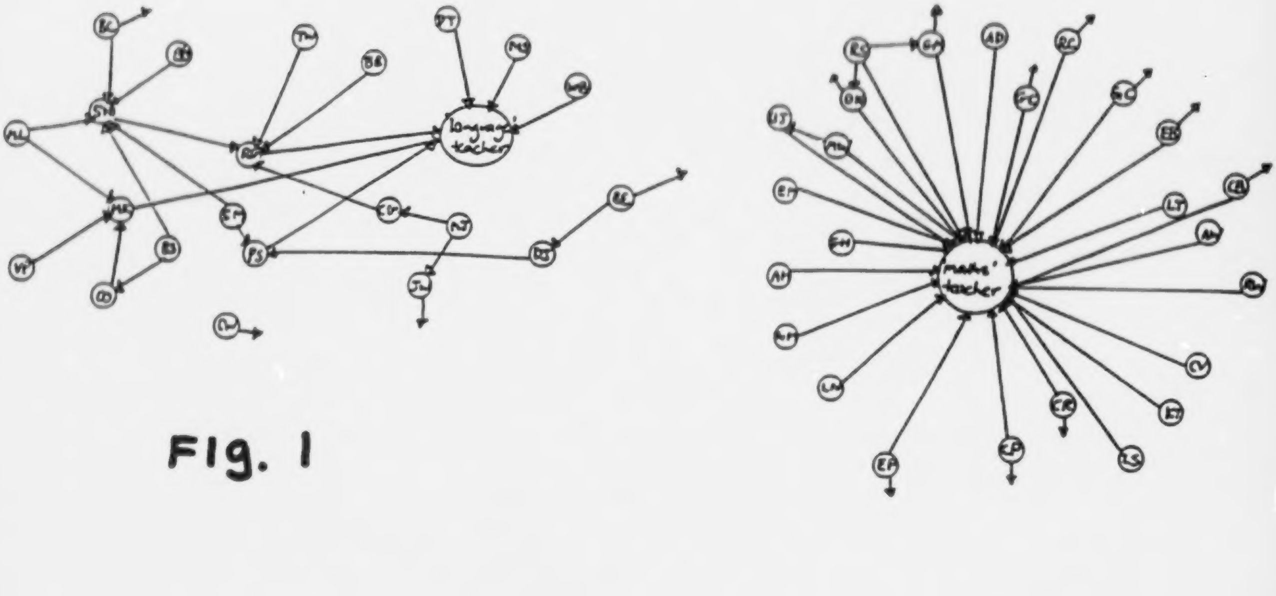


Fig. 1

Developing workplaces as learning environments:

Towards a learning curriculum [1]

Stephen Billett

This paper draws on a program of research into workplace learning to advocate an approach to the organisation of workplace experiences aimed at making workplaces effective learning environments. The program of research, conducted in the coal, transport, secondary processing, retail and other industries, aimed to determine how individuals learn through participation in everyday work practice and how arrangements might be structured in workplaces to provide access to the types of knowledge required for vocational expertise. From these studies and associated inquiry the notion of the learning curriculum (Lave, 1990) is used to guide thinking about developing expertise in workplaces. This approach is premised on organising guided participation in the everyday activities of the workplace, while moving from a peripheral to a full role in the activities of the workplace. The literature which underpins the arguments in this paper represent a convergence between cognitive and sociocultural constructivist perspectives The paper addresses issues associated with: the types of knowledge required for vocational expertise which are viewed as goals for learning; a view about what learning is; the potential and weaknesses of the workplaces as learning environments and a model of a learning curriculum is advocated. It is proposed that these ideas will contribute to discussions on adults and literacy learning.

1. Introduction

This paper aims to contribute to discussions about how the construction of the knowledge required for literacy by providing a view of learning and the goals for learning through participation in social practice. The kinds of social practice referred to in this paper are workplaces and the paper offers an analysis of potential contributions and limitations of workplaces in assisting the forms of knowledge required for competence or capability (expert practice) in those particular settings. Initially, goals for learning are advanced in the forms of knowledge which underpin and permit expertise. That is the ability to use these forms of knowledge to secure goals associated with non-routine problem solving in particular social practice. Next, a view of learning as problem-solving is advanced which holds that ongoing thinking and acting while engaged in everyday activities is how individuals construct knowledge. Hence, learning is not restricted to or privileged by particular social practice (e.g schools, TAFE, university) but is a product of thinking and acting in any environment. Given that the construction of individuals' knowledge is influenced by engagement in goal-directed activity (thinking and acting) in particular circumstances, the circumstances of those activities are held to influence the construction of knowledge as the activities and goals of such activities are a product of the particular social practice (Billett, 1995b). Next, the strengths and limitations of workplaces as environments in which to learn the forms of knowledge required for expertise are synthesised from a series of studies into workplace learning. Leading from this, a view of a workplace learning curriculum is advanced. It is hoped that such ideas will advance discussions about how the construction of adults literacy knowledge might best be realised. The ideas presented here are seen as being sympathetic to the view of `meaningful context' advocated by Sticht (1987) as being responsible for impressive gains in reading ability by marginally literate adults. The analysis within this paper engages and links two constructivist perspectives - cognitive psychology which addresses forms of knowledge and their deployment in problem-solving and sociocultural theory which addresses the social source and basis for the construction of knowledge.

---

[1] *1. This paper draws on work presented at the* New Prospects for Vocational Education and Training *1-4 May 1996 National Taiwan Normal University. Taipei, Taiwan. ROC and 6th Annual Workshop on TAFE teacher Education at Coffs Harbour 30 September - 1 October 1996.*

2. Goals for learning

Before discussing learning or the efficacy of particular curriculum practice it is necessary to propose a view about the forms of knowledge that are the goals for learning. Through an understanding of these goals it is possible to advance views about approaches to the construction of knowledge. Representations of knowledge in memory underpin how individuals think and act according to cognitive theory (Anderson, 1982). These representations, described as cognitive structures, comprise propositional and procedural forms of knowledge, and the interlinking and organisation of those structures into sets of schemata (Stevenson, McKavanagh & Evans, 1994) which is associated with the efficacy of thinking and acting in particular circumstances. Higher orders of procedural knowledge (Stevenson, 1986a) or executive strategies (Evans, 1991a) and deep layers of conceptual knowledge (Evans, 1991b) assist in the construction and effective deployment of schemata.

Propositional knowledge or *knowledge "that"* (Ryle, 1949), also termed declarative knowledge (Anderson, 1982), comprises facts, information, assertions, concepts and propositions. This kind of knowledge comprises levels of stateable facts or concepts (Evans, 1991b), ranging from simple factual knowledge (e.g. spelling, nouns,) through to deeper levels of conceptual knowledge (such as grammatical structure and language).

Depth of understanding includes the strength of relationships among concepts (Groen & Patel, 1988; Novak, 1990), thereby emphasising interconnectedness as a basis for deep understanding (Prawat, 1989). The ability to effectively categorise, and hence solve complex problems, is a hallmark of expertise. Anderson states that the "ability to perform successfully in novel situations is the hallmark of human cognition" (1982, p.391). Novel tasks often requires the problem-solver to go beyond the surface features of a problem situation in order to access its deep features (Chi, Feltovich & Glaser, 1981; Gott, 1989). Therefore, deep conceptual knowledge facilitates the resolution of complex problem-solving, such as the transfer of knowledge to novel situations (Pea, 1987; Royer, 1979). Conceptual knowledge, within a domain, also provides a basis for determining what is salient or trivial in problem situations, thus aiding their resolution. Hence, a body a deep conceptual knowledge, within a domain, seems necessary for expert performance (Chi, et al., 1982).

Procedural knowledge (Anderson, 1982), also termed *"knowledge how"* (Ryle, 1949), enables skilful action and comprises techniques, skills and the ability to secure goals (Stevenson, 1991). It has been classified into levels or as Stevenson (1991) proposes three levels of orders. First order or specific procedures are employed to achieve specific goals. Being specific only to routine situations, these procedures are not purposeful when non-routine or ill-defined tasks are encountered. Consequently, monitoring, evaluation and strategy selection - the second-order procedures - are invoked. The second order includes those needed for breaking the task up into a series of sub-goals (Greeno & Simon, 1988) and engaging in means-end analysis (Newell & Simon, 1972). First and second orders are managed by forms of third or higher-order procedural knowledge, which act upon lower orders of knowledge, by monitoring and organising activities, and by switching between orders, when necessary (Evans, 1991a, Scandura, 1982; Stevenson, 1991).

Therefore, the role of higher order procedures is particularly important in thinking processes associated with non-routine activities, such as complex problem-solving (Gott, 1989) and the transfer of knowledge to novel situations (Royer, 1979; Stevenson, 1991). Higher order procedures monitor performance during problem resolution and predict likely outcomes of performance, thus consciously guiding action in a way quite different from that enacted through the deployment of automated specific proceduralised knowledge. For example, while higher order procedures allow an expert to focus on novel aspects of the problem, if the solution does not begin to unfold as is expected, the monitoring will suggest that perhaps an incomplete diagnosis has occurred. The writer whose planned approach fails to secure clarity of argument, re-examines the work and proposes other strategies for securing the desired clarity.

Having considered cognitive structures in terms of deepening layers of propositional knowledge and orders of procedural knowledge, a gap becomes apparent in the cognitive literature - the dispositions which underpin these representations and their schematic linkages and organisation. For instance, how can being pleasant to customers in a retail or restaurant setting, or the appropriateness of the level of checking and self-monitoring required for a written assignment or report be categorised? Dispositions comprise the attitudes, values, affect, interests and identities (Prawat, 1989) which underpin thinking and acting. Perkins, Jay and Tishman (1993a, 1993b) regard dispositions as individuals' tendencies to put their capabilities into action. Although the role of higher order procedures - knowing how and when to apply knowledge - has been acknowledged above, this does not adequately account for dispositions - putting capabilities into action. Higher order procedures are concerned more with the efficacy of securing goals, than with whether the learner thinks they are worth securing (Dweck & Elliot, 1983; Goodnow, 1990; Tobias, 1994) or whether individuals possess the personal confidence or motivation to proceed with the task (Belenky et al., 1986).

Whether individuals value a particular form of knowledge enough to be willing to participate in the effortful activity required to secure that knowledge is dispositional, which has direct implications for the learning process and its outcomes. Therefore, dispositions need to be viewed as being inherent, underpinning but not separate from cognitive structures, thereby influencing cognitive activity such as knowledge construction and deployment. Moreover, dispositions are likely to be influenced by social and cultural factors experienced through individuals' personal history.

3 A view of learning as problem-solving

Problem-solving is central to thinking and acting, and is advanced as being how individuals learn. Reference to problem-solving needs to includes distinctions between responses to routine and non-routine problems. For example, decisions about what clothes to wear or what route to take are problem-solving activities. The tasks of choosing among sets of work clothes or routes to work are routine problems, because they are easily addressed. However, choice of clothes to attend an interview, or social occasion, or the route to an unfamiliar part of town, may present a novel situation. The former problems are routine as the variables are known, thus making a solution choice relatively easy. However, in non-routine situations not all variables are known, so individuals recall similar situations from the past to establish a basis for decision-making, all of which may require access to conceptual understanding and higher procedures. With routine problems, schemata are deployed to resolve the problem, requiring little conscious or effortful engagement of cognitive structures. However, small adjustments or manipulations which require conscious effort may be needed, when the existing knowledge is not directly applicable to new situations. So responding to non-routine problems is a major function of conscious, controlled thinking, and is now being associated with learning (Anderson, 1993; Shuell, 1990) and transfer (Royer, 1979). On the other hand, ongoing routine problem-solving activity reinforces knowledge. Together, these activities contribute to what Rogoff (1990) refers to as microgenetic development, the moment by moment learning that occurs through engagement in socially determined activities. That is, ongoing thinking and acting (problem-solving) is associated with how individuals construct knowledge (learn).

However, the delineation between routine and non-routine is person dependent. What for one individual may be a routine problem could be novel to another. Moreover, how individuals represent problems may determine whether they are treated as routine or non-routine, as individuals may turn a routine task into a non-routine problem (Simon, 1973). As problem-solving is set in social practice it engages cognitive activities with social sources because the activities and their goals are embedded in social practice. It has been determined that engagement in particular social practice has particular cognitive consequences (Billett, 1995a).

4. Social basis for learning

> Only through gaining access to a real-life standpoint are individuals able to act meaningfully and purposefully as "situations might be said to co-produce knowledge through activity" (Brown, Collins & Duguid, 1989:32).

Individuals grow up in a social medium, and that their actions gain meaning as they exist and act in a medium of meaning and values (Dewey, 1916). He suggests that learning through engaging in real-life activities provides a rich basis for appropriating knowledge. Learning is therefore held to take place through situated activity using physical environments, the tasks they provide, the co-operative construction of knowledge among groups of social partners undertaking common tasks, and the culture of a community (Brown et al., 1989).

It is erroneous, to claim that formal learning institutions are `de-contextualised' and furnish knowledge which is inherently transferable. These settings or communities of practice have strong and pervasive cultures, with their activities being shaped by the requirements of the institution, which may thereby place limits on transfer to other settings (Billett, 1994b; Raizen, 1989, 1991; Rogoff & Lave, 1984). Situated learning challenges the separation of knowledge from how it is constructed and used, with situation being seen as inseparable from learning and cognition which suggests that settings referred to as formal institutions of learning are not necessarily privileged in developing participants' knowledge. Circumstances are not neutral; they are an integral part of what knowledge is constructed (Brown et al., 1989; Lave, 1993; Lave & Wenger, 1991; Wertsch, 1993). Cross-cultural studies have examined the nature and consequences of learning which might be described as being authentic, such as navigation in Puluwat (Hutchins, 1979, cited in Scribner, 1984), construction work (Carraher, 1986), tailoring (Lave, 1977; 1990) and weaving in Zinacanteco (Childs & Greenfield, 1980). In the study of weaving, the skills developed were seen as being at least as transferable as those developed in schooling (Childs & Greenfield, 1980). That is, the knowledge and skills constructed through "informal" learning experiences were as robust and transferable as those developed through schooling. There is little reason to believe that participation in formal educational settings is inherently likely to generate knowledge that is robust and transferable. Rather it is the quality of the activities that individuals engage in, and their engagement with those activities which are likely determinants of whether robust and transferable knowledge is secured.

5 Workplaces as environments in which to learn

In this section findings from a series of studies into workplace learning(Billett, 1992, 1993a, 1993b, 1994, 1995a) are synthesised. These studies examined the consequences of participation in activities in the workplace as a means of securing knowledge and highlight some strengths and limitations associated with that participation. The key concerns are how the forms of knowledge referred to earlier can be constructed by engaging in problem-solving activities encountered as part of everyday workplace activities.

5.1 Strength of workplaces as learning environments

Participation in authentic workplace activities, guidance by expert others, other workers and engagement in tasks are seen as the basis for effective learning in workplaces (Billett, 1995a). The construction of the knowledge required for expert performance is apparently realised through learning experiences that are authentic, thereby providing goal-directed activity (problem- solving) which has cognitive consequences of particular salience for workplace activities. Close or proximal guidance by other workers in securing workplace goals is valued by learners. It is held that, everyday participation in work tasks provides opportunities for learners to generate tentative solutions to tasks and then attempt to secure those solutions. This results in knowledge being indexed and organised in ways that is purposeful in terms of the successful securing of workplace goals. This guided approach to learning provides the opportunity for learners to develop increasingly mature approximations of the procedures required to be successful in these tasks, through a process of testing and modifying their approximations. As these procedures are tested and modified it is likely that concepts associated with goals and subgoals will become deepened through rich associations, linkages and purposeful organisation. Over time, this ongoing activity results in the development of a repertoire of goal-securing schemata which are richly associated with the circumstances of their acquisition through routine and non-routine problem-solving. Indexing to the social environment provides a form of mediation which draws upon the social and cultural contributions (clues and cues) of the particular setting (Brown, et al., 1989).

The interaction with expert others guides the learners' tentative solutions to tasks and the means of securing goals (Billett, 1994). Experts provide the means for achieving task goals, through proximal guidance and more distal contributions such as access to further practise and increasingly complex tasks. This proximal interaction is analogous to the modelling, coaching and scaffolding of the approach to learning referred to as cognitive apprenticeships (Collins, Brown & Newman, 1989) in what Vygotsky (1987) refers to as the Zone of Proximal Development. That is the array of the tasks that can be successfully accomplished with the assistance of an expert, which otherwise could not be accomplished, by learners on their own (see Appendix A for an elaboration of this approach to close guidance). Indirect or distal forms of guidance also provide sources of supplementary mediation for the construction of knowledge. For example, listening to and the observation of other workers in the workplace is reported to assist the learner with the conceptualisation and approximations of workplace tasks (Billett, 1994).

It is held that the active and constructive learner-focussed nature of engagement in workplace activities presses learners into goal-directed activity, is conducive to accessing higher orders of procedural knowledge and deeper conceptual knowledge, as well as the development of more specific forms of knowledge (Billett, 1993a; 1993b; 1994; 1995b). It is these forms of knowledge which are particularly useful for the transfer of knowledge to other circumstances. From a constructivist perspective, the active engagement in routine problem-solving activities affords another key quality – reinforcement – the satisfaction that individuals experience when they adapt new stimuli to their existing knowledge structure, or, put more simply, when they are `making sense' of the stimuli (von Glasersfeld, 1987). This is an important distinction between views which are premised on the nature of learning as being externally directed (e.g. behaviourists), where reinforcement is linked to external endorsements, and constructivist views where reinforcement is the internal gratification realised through making sense of a novel stimuli through a process of interpretative construction. From this view, as individuals construct knowledge they experience reinforcement as procedures become more effective, predictions are realised through monitoring, and task goals are achieved to a standard required by the culture of the particular workplace practice. In these ways, the above mentioned studies offer evidence of the potential that exists within workplaces for the development of purposeful vocational knowledge, a potential which can be realised through guided participation in everyday work practice.

5.2 Limitations of workplaces as learning environments

Although workplaces offer the potential for rich learning outcomes, through participation in everyday practice, they also have limits. Possible limitations to the effectiveness of workplace learning are synthesised as follows: (i) the construction of inappropriate knowledge; (ii) access to authentic activities; (iii) reluctance of experts; (iv) access to expertise; (v) opaqueness of some knowledge and (vi) access to instructional media (Billett, 1995b). Underpinning learning in workplaces is that they, like any other settings, are inherently value-laden. Values associated with the goals of the organisation (e.g. productivity , service) and of those individuals working the setting (e.g. personal or sectional interests) cannot be denied as they influence the nature, type and access to the activities which influence cognitive development.

5.2.1 Inappropriate knowledge

Inappropriate knowledge, including attitudes and values may result if these are present and rewarded in the workplace. For example, dangerous work practice or exclusive views about gender and race might be pervasive. Particular views privileged in the workplace are likely to be quite pervasive. As most forms of situated learning occur where relationships between participants are unequal (Verodonik, et al, 1988), the nature and values embedded in workplaces are likely to play a role in determining the types of knowledge that are constructed. Therefore, despite individuals ultimately constructing their own version of knowledge, the press of the workplace or desire to conform may result in deleterious learning outcomes. So, for example, dangerous or shoddy work practice might be appropriated because such practice is a workplace norm. Hence, there is the limitations that not all knowledge secured in workplaces will lead to expertise.

5.2.2 Access to authentic activities

The potency of learning is determined by the quantity and quality of guided access to authentic activities which press learners into problem-solving. If learners are denied engagement in activities which are increasingly challenging, it is likely that the learning outcomes will be constrained. Access to work activities need to be sequenced to take the novice from engaging in peripheral activities through to increasingly complex tasks. Moreover, those activities which allow the learner to access both the process and the product of those activities need to be included.

5.2.3 Reluctance of experts

Workplace environments in which learners are provided with models, coaching and insights are likely to provide rich learning outcomes. However, reluctance by experts to furnish these interactions may severely inhibit the outcomes of workplace learning. Expert workers may well be cautious about sharing their knowledge for fear of loss of status or even concerns about displacement, by those whom they have guided (Lave & Wenger, 1991). In Japanese corporations, where workplace learning is used widely, supervisors, whose roles include training subordinates, are secure in the knowledge that their promotion is based on seniority (Dore & Sako 1989). These experts provide learning experiences for their subordinates without concerns about displacement by those they have trained. Experts who are not rewarded or fear displacement may be unwilling to provide the proximal guidance and access to increasingly complex tasks which is essential for learners. A particular issue in the Australian context is concern about industrial affiliation in which particular jobs are undertaken by particular groups of workers. So, for example, a tradesperson may be reluctant to show a non-tradesperson a particular task, if they believe it may jeopardise the tradesperson's interest.

5.2.4 Access to expertise

A lack of available expertise will be likely to have a negative impact upon workplace learning. Although expertise external to the workplace may be required to provide guidance, any external expertise has to account for the conditions under which work practice is conducted. For example, in one of the studies (Billett, 1993a), coal workers stated that the technical teachers at a nearby vocational college lacked an understanding of how work was conducted in coal mines. However, in another study (Billett, 1994a), novice staff worked alongside experts from overseas during the commissioning of a secondary processing plant. In doing so, these novices gained important understandings and insights which have allowed them to take responsibility for the plant's operation and to respond to problems that arise during production. Access to expertise is likely to be an important factor in workplace learning, therefore limits to access could have negative outcomes.

However, as is reported consistently in the studies, the learner determines who is and is not expert.

5.2.5 *Accessing conceptual (propositional) knowledge*

Concerns were reported in two studies (Billett, 1993a & 1994) about the inability of workplace learning activities to secure the depth of understanding required for complex work activities. Prawat (1993) also suggests that situated learning may favour the development of procedures over propositions. Such concerns need to be acknowledged because, as Berryman (1993) reports, the increasing complexity of work is making many tasks more opaque, requiring a rich conceptual base to understand and be effective in these more complex forms of work. The studies indicate that, despite the concerns of Prawat (1993) and some participants, propositional knowledge is developed through guided everyday activities in the workplace. However, close guidance and even intentional instructional intervention is likely to be required to develop understanding about knowledge that is opaque and hidden from the novices. For example, 'black-box-technology', computer-driven processes, forms of work organisation or even opaque concepts such as hygiene and contamination are making knowledge inaccessible. The conceptual knowledge required for this understanding is often inaccessible to the novice without proximal guidance of an expert.

5.2.6 *Instructional media*

Currently, much of the effort to manage learning in workplaces is grounded in the use of various forms of text-based instructional materials. These media, such as computer-based and text-based learning systems, are often proposed as training solutions for workplaces. However, it is reported that such media offer access to forms of knowledge that are disembodied from the activities for which they claim to be developing knowledge (Billett, 1994). The knowledge, so constructed, has to be transferred from the context of acquisition to application in the workplace in order for knowledge to be deployed. This is because the type of knowledge developed through interacting with these texts does not develop the types of knowledge required to secure goals in novel circumstances. In addition, these types of learning arrangements are most likely to be generative of certain types of knowledge, particularly very specific procedures and low-level propositional knowledge, which are not, of themselves, likely to assist with complex work performance.

Having advanced findings about the prospects for the construction of the forms of knowledge required for expert performance through everyday activities in the workplace, in the next section, a tentative model of workplace learning -- the learning curriculum --is described drawing on current theorising and empirical work.

Towards a model of workplace learning: the learning curriculum

The approach to organising a learning curriculum presented here depends upon access to activities that provide guided opportunities to engage in problem-solving that is conducive to generating the forms of knowledge outlined earlier. Consequently, engagement in tasks is viewed as being the basic unit of curriculum and the organisation and sequencing of those activities is central to the learning curriculum, such as has been advocated by Posner (1982). Lave's (1977) study of Liberian tailors' apprentices is particularly instructive when considering curriculum as participation in social practice. She demonstrates how authentic work activities mediate learning. The activities in the tailors' workshops are structured in such a way as to represent a hierarchy of tailors' tasks which apprentices have to learn. The garments produced by tailors also reflect values within Liberian society, which influences the tailoring activities with simple garments (undergarments and children's garments) requiring fewer skills whereas ceremonial garments requiring more complex skills and greater exactitude. These tasks provide the basis for the development of layers of understanding about the significance of tasks and conceptualisation of those tasks. This sequencing of activities is termed the learning curriculum by Lave (1990). For example, the first tasks undertaken by apprentices are finishing off and ironing completed garments. This permits apprentices to develop an understanding of what garment pieces look like as they are being ironed, and to observe the form and standard of the completed product. Apprentices also commence learning by assembling complete garments, such as under-drawers and shirts, and gain skills in constructing garments in situations where mistakes are tolerable.

The apprentices work on real garments assisted by an assortment of mentors, tailors and other apprentices in the workshop who provided guidance and modelling. Consequently, apprentices are able to monitor their own performance against that of other learners and enjoy direct and indirect guidance (Lave, 1990). There are also environmental clues such as completed or incomplete garments on which to model their work. Hence, as part of the learning curriculum, apprentices are also able to view both the processes and products of the workshop, which is conducive to the development of conceptual models. Lave (1990) also observes that little in the way of explicit teaching takes place. In these ways, her study emphasises the primacy of the authenticity of activities in which novices engage. These activities are organised in such a way as to provide movement from peripheral to more complex tasks; as well as access to observation, opportunities to develop mental models, and rehearsal on less critical activities and guidance, most of which is indirect, from experts and other novices; and also clues from the physical environment. In addition, and perhaps in consideration of fully appropriating the values and norms of a tailor, apprentices live in master tailors' houses in a street full of tailors' workshops (Lave, 1977; 1990).

In another example, Carraher's (1986) study, which compared the use of maths by construction supervisors with that of school students found that, the daily work experience of construction supervisors, despite their limited formal education, developed more complex and adaptive meaning structures, associated with maths, than those possessed by school students. This authentic, functional and socially embedded approach to learning is reinforced by the example of children's' language and interpersonal skills development, usually constructed in the home under the guidance of parents between the child's first and fifth year. The learning during these years has been described as "spectacular" by Bransford, Sherwood and Hasselbring (1985, cited in Pea, 1987), who conclude that children learn quickly with little explicit intervention and with little obvious effort. These authors report three characteristics of this spectacular learning process: firstly, the learning is in context; secondly, effective mediation is provided; and, thirdly, learning is functional.

The informative nature of authentic activities is exemplified in a recent study. A novice pallet-packer in a warehouse reported using the various configurations of pallet packing, which were all around him in the warehouse, as a library of possible packing configurations. When faced with a novel situation, he would use examples in the warehouse to assist decision-making about the most appropriate configuration (Billett, 1993b). It seems that authentic activities can be deeply informative, in a way that textbook examples and declarative explanations cannot be (Brown et al., 1989).

From the foregoing, it is held that the potential strengths of learning through engagement in socio-culturally authentic activities reside with novices being able to observe both the process and product, and also develop richly interlinked conceptual representations. Novices, while undertaking authentic activities, may have access to proximal and distal sources of guidance such as a range of experts and the cues and clues provided by the workplace. They can monitor themselves against other learners at different stages of development, and watch and participate as tools are used, and standards are stated both explicitly and implicitly. Novices are also pressed into decision-making within their Zone of Proximal Development (Vygotsky, 1987) and provided with feedback on how to achieve increasingly more mature approximations of expert-modelled tasks (Collins et al., 1989). Learners are able to conceptualise what they are doing as part of the totality of task completion and have to confront practical problems in realistic settings and conditions which are functional, embedded and purposeful in a way that abstracted, substitute or simulated activities can never be. That is not to say there is no place for substitute or simulated activity as long as their limitations are recognised.

In order to formulate a framework for the learning curriculum it is necessary to draw on the work of Lave (1977, 1990) and some of the findings of the workplace learning studies (Billett, 1993a, 1993b, 1994a, 1995). From this work it held that, the organisation of the learning curriculum needs to be linked to: (i) movement from peripheral to full participation in workplace activities; (ii) access to the product (goals) of workplace activities; (iii) proximal guidance from more expert others; and (iv) distal guidance provided by the physical as well as the social environment (see Figure 1).

6.1 movement from peripheral to full participation in workplace activities

It is necessary to identify a pathway of vocational tasks and activities which workplace learners need to access and move through to become competent (full participant in the workplace). Delineating this learning pathway is used to determine how workplace learners can move from the work activities undertaken by novices to those of experts. This pathway is founded on movement from peripheral activities to full participation in work activities - that is, from those activities which are less accountable and complex, to those which are usually more complex and may carry greater accountability (see Lave & Wenger, 1991). The development and sequencing of this pathway of activities need to accommodate two general requirements. The first is the sequencing of workplace activities that are of increasing complexity. This permits the learner to participate in incrementally more accountable, tasks and goals in the movement from peripheral to full participation in workplace activities. This necessarily involves engagement in routine and non-routine activities. Secondly, the pathway has to afford learners the opportunity to access the procedures and processes, and importantly, the products of workplace activities. This means that, early in these activities, opportunities must exist for learners to access and understand the outcomes of their work activities. This access enables the development of understanding about the goals and standards of those activities. It is quite likely that such structures will already exist in workplaces.

So, the sequencing of workplace activities that are of increasing complexity permits the learner to engage in movement from peripheral to full participation in the workplace. Such a pathway does not need to be a fixed sequence of activities to be undertaken in a step-by-step fashion. Rather a grouping of activities which can be accessed and undertaken by learners as opportunities arise in everyday workpractice. Movement through the pathway is likely to be premised on the ability of the novice to be able to successfully complete the tasks without the proximal guidance of the expert other.

6.2 access to the product (goals) of workplace activities

Secondly, the pathway has to afford learners the opportunity to access both the product and the process of the workplace activities. This means that within the learning pathway there has to be opportunities for learners to access and understand the outcomes of their work activities. This access permits the development of understanding about what their activities are contributing towards and set standards associated with those activities. For example, in one of the earlier studies (Billett, 1993b) it was reported that, as part of their training, warehouse workers were taken in a delivery truck to supermarkets to see the goods they had packed onto pallets being delivered. This experience allowed these workers to appreciate the importance of care and thoroughness in packing the pallets to withstand the rigours of long road journeys and the importance of arriving in a presentable condition. Making the goal accessible provides important goals for vocational practice, which become goals for learners.

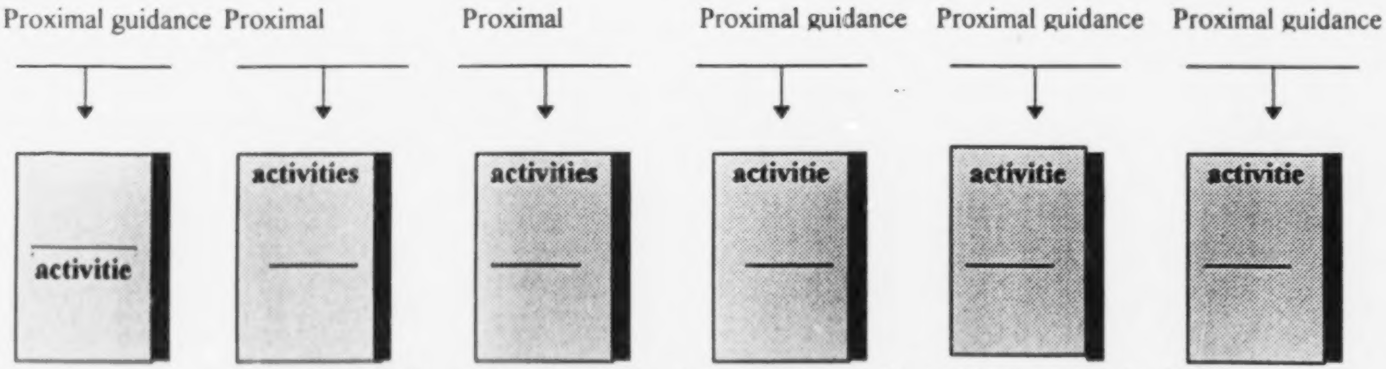
Constructing the Learning Curriculum

Adapted from Lave, 1977, 1990)

Peripheral → Full participation

Distal Guidance

(physical setting, observation, listening)



Proximal guidance

activitie

Proximal

activities

Proximal

activities

Proximal guidance

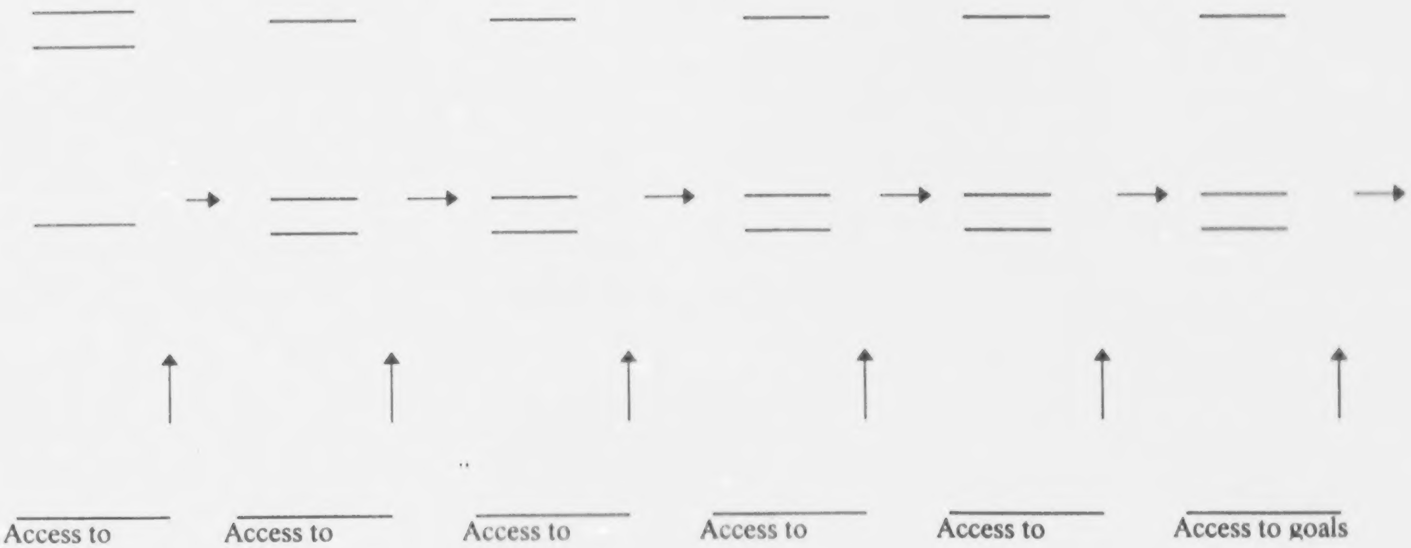
activitie

Proximal guidance

activitie

Proximal guidance

activitie



Access to

Access to

Access to

Access to

Access to

Access to goals

6.3 proximal guidance from more expert others

The investigations into workplace learning, referred to above, emphasised the importance of learners' interaction with expert others in the development of skilful knowledge. Access to experts was consistently valued highly. There would be no guarantee that someone entitled 'the trainer' or nominated workplace mentor would be granted this status by workplace learners. A model of guided learning which can be used by workplace experts, is cognitive apprenticeships (Collins, Brown & Newman, 1989). This approach to guided learning, seems particularly applicable for use by expert others to make potent proximal guidance. The cognitive apprenticeship model aids the development of learners' self-monitoring and self-correction skills, and the integration of the skills and conceptual knowledge required for expertise. This approach to guiding learning, which comprises (i) modelling, (ii) coaching, (iii) scaffolding and (iv) fading, is described in Appendix A.

6.4 distal guidance provided by the physical as well as the social environment

The on-going everyday activity which engages workplace learners in both routine and non-routine problem-solving provides the basis for the development of vocational knowledge. Indirect guidance is part of this experience which includes learners listening to and observing other workers. Models of practice, and standards by which learners can measure their progress against, are provided by this indirect form of guidance (Lave, 1990). Equally, the structuring of experience by the workplace and the cues and clues provided by the physical environment provide another form of distal guidance.

In the studies mentioned above, it was evident that the sharing of knowledge within organisations varied. Those organisations in which workers enjoyed broader discretionary roles and had limited barriers to work practice appeared to offer richer learning environments. These four dimensions of the learning curriculum provide a basis for vocational educators to develop workplaces as learning environments able to secure the knowledge required for full participation.

5. Conclusion

This paper has proposed a view of learning as participation in social practice rather than arrangements for teaching. This is are not a trite distinction. There is a need to capitalise upon the contributions to learning which are provided in social practice, such as workplaces and attempt to inhibit the shortcomings identified in recent research. The tasks associated with developing the learning curriculum may not be difficult. For example, the procedure to delineate the learning pathway might be as simple as determining the sequence in which experts believed they constructed their skills and compared this with the experiences of recent learners. An analysis of this data might then be used and refined in order to generate the most effective learning activity pathway, and the structuring of the opportunities so that the pathway provides the access to both the process (means of securing goals) and the product (what those goals might be). The identified pathway can be used to manage the sequencing of tasks which novices will have to access. An approach to constructing the learning curricula is likely to follow a pathway which seeks to determine: (i) what it means to be a full participant in a particular practice (what defines an individual who is expert in the practice); (ii) what are the areas of knowledge to be constructed by novices; (iii) what is the sequence in which this knowledge has to be constructed; (iv) what areas are difficult to learn about (complex, opaque) to focus proximal guidance) and what goals for performance need to be constructed on the pathway. Such an analysis will generate rich information about vocational tasks and the knowledge likely required for literacy, their relationship to a particular workplace and also how a learning curriculum might best be established.

In sum, this paper has advocated a view of curriculum associated with engaging in social practice. This view situates the development of curricula within a particular practice and through guided participation in that social practice. Drawing on constructivist views it is advocated that the construction of knowledge is an individual process, albeit embedded in and extricably associated with a workplace. That association includes a reciprocal relationship between the individual and the environment in which to engage in activities. In establishing a pathway of experiences, a learning curriculum is advanced which takes account of both direct and indirect guidance and the engagement in activities which are potentially generative of robust knowledge. It is hoped that the findings of research and ideas presented in this paper will make some contribution to the development of understanding of the development of adults' literacy knowledge.

References

Anderson, J. R. (1982). Acquisition of cognitive skill. *Psychological Review, 89* (4), 369-406.

Anderson, J. R. (1993). Problem solving and learning. *American Psychologist, 48* (1), 35-44.

Berryman, S. (1993). Learning for the workplace. *Review of Research in Education*, *19*, 343-401.

Billett, S. (1996). Situated learning: Bridging sociocultural and cognitive theorising. *Learning and Instruction, 6 (3) 263-280.*

Billett, S (1995a). Structuring knowledge through authentic activities. Unpublished doctoral dissertation, Griffith University.

Billett, S (1995b). Workplace learning: its potential and limitations. *Education and Training, 37 (4)* 20-27.

Billett, S. (1994a). Situated Learning - a workplace experience. *Australian Journal of Adult and Community Education*, 34 (2) 112-130.

Billett, S. R (1994b). Searching for authenticity - a sociocultural perspective of vocational skill development. *Vocational Aspects of Education, 46*(1) 3-16.

Billett, S (1993a). What's in a setting - learning in the workplace. *Australian Journal of Adult and Community Education, 33* (1) April 1993. 4-14

Billett, S (1993b) Authenticity and a culture of workpractice. *Australian and New Zealand Journal of Vocational Education Research,* 2 (1) 1 - 29.

Billett, S (1992). Developing vocational skills in the workplace. *Australian Journal of TAFE Research and Development, 8* (1). 1-12

Brown, J. S., Collins, A., & Duguid P. (1989). Situated Cognition and the Culture of Learning. *.Educational Researcher, 18* (1), 32-34.

Carraher, T. N. (1986). From drawings to buildings: working with mathematical scales. *International Journal of Behavioural Development, 9,* 32-42

Chi, M. T. H., Feltovich P. J., & Glaser R. (1981). Categorisation and representation of physics problems by experts and novices. *Cognitive Science, 5,* 121-152.

Chi, M. T. H., Glaser, R., & Farr, M. J (1982). *The nature of expertise.* Hillsdale, NJ: Erlbaum.

Childs, C. P. & Greenfield, P. M. (1980). Informal modes of learning and teaching: the case of Zinacanteco weaving. In N. Warren (Ed). *Advances in cross-cultural psychology, vol 2.* London: Academic Press.

Collins, A., Brown J. S., & Newman, S. E. (1989). Cognitive apprenticeship: teaching the crafts of reading, writing and mathematics. In L. B. Resnick, (Ed) *Knowing, learning and instruction, essays in honour of Robert Glaser.* (pp. 453-494). Hillsdale, N. J: Erlbaum & Associates.

Dewey, J. (1916/1970). *Democracy and education.* New York: The MacMillan Company. pp. 179-192, 279-285, 410-417. Reproduced in Cahn. S. M (Ed) *The philosophical foundations of education* (pp. 201-261). New York: Harper & Row.

Dore, R. P. & Sako, M. (1989). How the Japanese Learn to Work. London: Routledge.

Dweck, C. S., & Elliott, E. S. (1983). Achievement motivation. In E. M. Hetherington (ed) *Handbook of child psychology, 4,* 643-691.

Evans, G. (ed). (1991a). *Learning and teaching cognitive skills.* Victoria, Australia: The Australian Council for Educational Research.

Evans, G. (1991b). Lesson cognitive demands and student processing in upper secondary mathematics. In G Evans (ed)., *Learning and teaching cognitive skills*, ACER: Melbourne, Australia.

Goodnow, J. J (1990). The socialisation of cognition: what's involved?. In J. W., Stigler, R. A. Shweder & G. Herdt. (eds), *Cultural Psychology*. (pp. 259-86). Cambridge: Cambridge University Press.

Greeno, J. G., & Simon, H. A. (1988). Problem solving and reasoning. In R. C. Aitkinson, R. J. Hormiston, G. Findeyez and R. D. Yulle (eds). *Steven's handbook of experimental psychology and education, Vol 2*. New York: Wiley.

Groen, G. J., & Patel, P. (1988). The relationship between comprehension and reasoning in medical expertise. In M. T. H. Chi, R. Glaser and R. Farr, *The Nature of Expertise*. New York: Erlbaum.

Grusec, J. E., & Goodnow, J. J. (1994). Impact of parental discipline methods on the child's internalisation of values: A reconceptualisation of current points of view. *Developmental Psychology, 30* (2), 4-19.

Gott, S. (1989). Apprenticeship instruction for real-world tasks: The co-ordination of procedures, mental models, and strategies. In E. Z. Rothhopf (Ed). *Review of research in education*, Washington, D. C: American Educational Research Association

Lave, J. (1993). The practice of learning. In S. Chaiklin & J. Lave (eds). *Understanding practice: Perspectives on activity and context* (pp. 3-32). Cambridge, UK: Cambridge University Press.

Lave, J. (1990). The culture of acquisition and the practice of understanding. In J. W. Stigler, R. A. Shweder & G. Herdt (Eds). *Cultural psychology* (pp. 259-86). Cambridge. U.K: Cambridge University Press.

Lave, J. (1977). Tailor-made experiments and evaluating the intellectual consequences of apprenticeship training. *Quarterly Newsletter of Institute for Comparative Human Development, 1*, 1-3.

Lave, J., & Wenger, E. (1991). *Situated learning - legitimate peripheral participation*. Cambridge: Cambridge University Press.

Leonteyev, A. N (1981). *Problems of the development of the mind*. Moscow: Progress Publishers.

Newell, A. & Simon, H. A. (1972). *Human problem solving*. Englewood Cliffs, N.J.: Prentice Hall

Novak, J. D. (1990). Concept maps and Vee diagrams: Two metacognitive tools to facilitate meaningful learning. *Instructional Science, 19,* 29-52.

Pea, R. D. (1987). Socializing the knowledge transfer problem. *International Journal of Educational Research, 11* (6), 639-663.

Perkins, D., Jay, E. & Tishman, S. (1993a). Beyond abilities: A dispositional theory of thinking. *Merrill-Palmer Quarterly, 39* (1), 1-21.

Perkins, D., Jay, E. & Tishman, S. (1993b). New conceptions of thinking: From ontology to education. *Educational Psychologist, 28* (1), 67-85.

Posner, G. (1982). A cognitive science conception of curriculum and instruction. *Journal of Curriculum Studies, 14,* (4), 343-351.

Prawat, R. S. (1989). Promoting access to knowledge, strategy, and dispositions in Students: A research synthesis. *Review of Educational Research, 59* (1), 1-41.

Prawat, R. S. (1993). The value of ideas: Problems versus possibilities in learning. *Educational Researcher, 22* (6), 5-16.

Raizen, S. A. (1991). *Learning and work: The research base*. Paris: OECD.

Raizen, S. A. (1989). *Reforming education for work: A cognitive science perspective*. National Centre for Research in Vocational Education: Berkeley C A.

Rogoff, B. (1990). *Apprenticeship in thinking - cognitive development in social context.* New York: Oxford University Press.

Rogoff, B. (1995). Observing sociocultural activity on three planes: Participatory appropriation, guided participation, apprenticeship. In J. W. Wertsch, A. Alvarez, & P. del Rio (Eds). *Sociocultural studies of mind* (pp. 139-164). Cambridge: Cambridge University Press.

Rogoff, B., & Lave, J. (eds). (1984). *Everyday cognition: Its development in social context*. Cambridge, Mass.: Harvard University Press

Royer, J. M. (1979). Theories of the transfer of learning. *Educational Psychologist, 14,* 53-69.

Ryle, G. (1949). *The concept of mind*. London: Hutchinson University Library.

Scandura, J. M. (1982). Structural (cognitive tasks) analysis: A method for analysing content. Part 1: background and empirical research. *Journal of Structural Learning, 8,* 101-114.

Scribner, S. (1984). Studying working intelligence. In B. Rogoff & J. Lave (Eds). *Everyday cognition: Its development in social context* (pp. 9-40). Cambridge, Mass: Harvard University Press.

Shuell, T. J. (1990). Phases of meaningful learning. *Review of Educational Research, 60* (4), 531-547.

Simon, H. A. & Gilmartin, K. A. (1973). A simulation of memory for chess positions. *Cognitive Psychology, 5*, 29-46.

Sticht, T. G. (1987). Functional Context Education. San Deigo. CA: Applied Behavioural and Cognitive Sciences Inc.

Stevenson, J. C, McKavanagh, C. & Evans, G. (1994). Measuring the press for skill development. In J. Stevenson (ed) *Cognition at work: the development of vocational expertise* (pp. 198-216). Adelaide, South Australia: National Centre for Vocational Education Research.

Stevenson, J. C. (1986a). Adaptability: theoretical considerations. *Journal of Structured learning, 9*, 107-117.

Stevenson, J. C. (1991). Cognitive structures for the teaching of adaptability in vocational education. In G. Evans (ed). *Learning and teaching cognitive skills.* (pp. 144-163). Victoria, Australia: ACER.

Tobias, S. (1994). Interest, prior knowledge, and learning. *Review of Educational Research, 64* (1), 37-54.

Verodonik, F., Flapan, V., Schmidt, C. & Weinstock, J. (1988). The role of power relationships in children's cognition: Its significance for research on cognitive development. *Quarterly Newsletter of the Laboratory of Comparative Human Cognition (10)*, 80-85.

von Glasersfeld, E. (1987). Learning as a constructive activity. In C. Janvier (ed). *Problems of representation in the teaching and learning of mathematics.*. Hillsdale, N. J.: Lawrence Erlbaum.

Vygotsky, L. S. (1978). *Mind in society - the development of higher psychological processes*. Cambridge: Harvard University Press.

Wertsch, J. V. (1993). *Voices of the mind: A socio-cultural approach to mediated action*. Cambridge, Mass: Harvard University Press.

Appendix A -Model of proximal guidance

Modelling is the process whereby the expert executes a task with learners observing and building a conceptual model of what is being demonstrated which assists learners to successfully accomplish the task. However, it may require the externalisation of the internal (cognitive) procedures that experts deploy when utilising their procedural and conceptual knowledge. Experts may need be instructed to verbalise their thinking to assist learners, eg. - *"the reason you place the pin in first is to ..." "if the gauge comes up too quickly it means that... "what I am considering at this point is..."* Observation allows learners to observe task completion and be offered an account of how the expert went about the activity. An important quality of effective modelling is to make accessible any knowledge which is opaque. Therefore, experts may need to use analogies, explanations, diagrams or probing questions to make accessible to the learner that knowledge which is not accessible by visual means.

Modelling →	**Coaching →**	**Scaffolding →**	**Fading**

Coaching is the process of observation and monitoring by the expert as learners carry out activities. Experts will offer hints, feedback, clues and demonstrate tricks of the trade to assist learners achieve desired outcomes. Coaching may also involve repeated demonstrations of a task, or part of the task. Supportive comments are also part of the coaching phase. Asking learners to consider where else they can use a particular procedure or suggest changes in approach given the different application of a procedure or process *"If you were packing a pallet with a new type of box what would you need to do?"*. Coaching may also serve to direct learners' attention to aspects of the task that is known, but temporarily overlooked. Coaching interaction is usually immediately related to specific events or problems that arise as learners attempt to achieve the target task. The intended outcome of the coaching process is to guide learners' performance to become closer to that of the expert so that learners approximation of tasks becomes increasingly mature (Gott, 1989).

The on-going support that experts provide is referred to as **Scaffolding**. This support takes the form of providing learners with opportunities to acquire knowledge and skills that are within the scope of the learners' ability. Additional suggestions or help, take the form of supports such as general reminders which might comprise scaffolding *"always start at the centre back and measure down from there and then move down from the chest to the waist and hips"*. Scaffolding may require the expert to carry out a part of the overall task that the learner cannot yet manage. Scaffolding offers a co-operative basis to problem-solving between the expert and the learner in which the express intention is for the learner to take as much of the responsibility for the activity as possible. A requisite for such scaffolding is an accurate appraisal, by the expert, of the learner's current skill level and the difficulty of the task. Finally, **Fading** consists of gradual removal of support until learners are able to conduct the task autonomously. This more distant support might lead to decisions about providing opportunities to engage in a range of more complex tasks. The development of experts' ability to use the strategies associated with cognitive apprenticeships, some of which they are probably using intuitively, is a useful undertaking.

Last CALL for all: before IT races down the superhighway

Paula Burns

The computer is the perfect complement to Adult Literacy training, allowing for personal tuition, flexible delivery and multitasking. Computers can assist Adult Literacy trainers to successfully and simultaneously provide for the varied range of skill levels and needs present in any single Adult Literacy training environment. Flexible delivery becomes a reality. Adult Literacy training stands to benefit enormously from the introduction of these new technologies, simply because they are the tools of current Literacy practice, and as such form an integral portion of the skills that allow our students to engage in "full participation in community life", (Editorial, Fine Print, June 1996, p.3) further training and employment.

"Right now we are at an important literacy conjuncture." (Lankshear, Fine Print, ibid, p.4) We are embarking on an era which will view one's ability to engage with information technology applications as an integral component of a person's literacy skills. Our definitions and understandings of what constitutes Adult Literacy training need to respond to and incorporate the rapidly expanding range of information technology that affects all of our daily lives. Increasingly, our workforce and educational institutions direct us to recognise computer skills as fundamental literacy skills. We are living in a Technological Revolution, as expansive in its implications for the future, as the Industrial Revolution. "Computers isn't about computers any more. It's about living."(Negroponte cited in Corbel, Fine Print, ibid, p.10)

How then, can we best approach the process of integrating computer literacies into our ALBE settings? What distinctive software features would be most beneficial in an Adult Literacy training environment? As an Adult Literacy trainer, I would suggest that user flexibility is a most desirable attribute. Here, I would emphasise the value of programs with a "WRITE TO" capacity: those programs which offer activities that allow users to add their own word lists and texts to the database. An Adult Literacy class in a relatively high socio-economic suburb of Sydney will have very different needs to a class in the outback, or a class in a manufacturing industry that focuses on the specific vocational training needs of its participants. CALL programs with a "WRITE TO" capacity allow for these different needs. With the aid of a "WRITE TO" database, an Adult Literacy class studying The Olympic Games can work on activities that focus on relevant stories and wordlists. Another class may focus on Soil Erosion, Politics or Small Business and tailor the CALL program to suit their needs. Alternatively, personalised student databases may be created to meet individual needs. Students with very diverse literacy skill levels may work in the one room on various Literacy-based applications or tasks. There is no need and no reason to supplement existing curriculum by using computer training as an "add on". (Lankshear, Fine Print, ibid, p.6)

Email and the Internet will continue to be integrated into our understandings of the term "Literacy", but let's look at first base: an introduction to computers, before we hit a home run, or should I say, a home page. Perhaps the pedagogy of Adult Literacy would benefit from some structure in relation to our teaching of these new technologies, so that students and teachers can become familiar with PCs before we all move on to the World-Wide-Web.

We should immediately implement projects that provide ample opportunity for as many of our Adult Literacy students and teachers as possible to be introduced to computers, to familiarise themselves with basic PC skills. What do I mean by "basic PC skills"? Alan Wayman suggests that, "computer literacy consists not of knowing how to use a single package, but how to apply the knowledge of that single program in a new context, ie a different program".(Wayman, Fine Print, ibid, p.23) There is a particular stage of self sufficiency that computer users reach, where they are able to investigate and successfully utilise new programs, based on their previous knowledge and experience of other programs.

To be practical, I would suggest that at present, *basic PC skills* for Adult Literacy providers and their students would entail an introduction to the increasingly popular Windows environment: mouse usage; an introduction to a simple wordprocessing package; a typing program and perhaps, a drawing program or other graphics application. I don't think we can afford to presume that most Adult Literacy providers already have these skills. We need to ensure that as many people as possible who are involved in the pedagogy of Adult Literacy, catch the first bus, (basic PC skills/an introduction to computers) before the second bus calls us down the superhighway.

Finally, we should remind ourselves that "...struggles over languages and literatures are always struggles for power, always political struggles."(Threadgold. Deakin University, 1993, p.208) Colin Lankshear makes the point of recognising that the "...new social practices with their characteristic embedded languages and literacies..." that emerge around new technologies "...are tomorrow's powerful literacies...".(Lankshear, Fine Print, op cit. p.4) Unfortunately, those who find it difficult to tackle the English language may well be left behind in the computer stakes. "The technology rich get richer and the technology poor get poorer, not just in dollars but in quality of life and participation in society".(Tankard, Fine Print, op cit, p.19) To counteract this, the introduction of "computing for literacy- the use of computers in learning print literacies", (Bigum and Green, 1993, as cited by Corbel, Fine Print, op cit, p.10) would seem appropriate for many Adult Literacy environments. We don't need state of the art machines or the latest software, but we should "assist students to develop language and literacy with the aid of computers".(Editorial, Fine Print, p.3)

Students and teachers will benefit from the successful integration of computer technology into existing Adult Literacy provision. We can maintain much of our past Adult Literacy curricula, improving on it by offering clients computers as a tool to improve their print literacy skills. In doing so, we meet both the demands of our clients' more traditional print literacy needs, while simultaneously introducing them to the new literacies of our time. My support for "computing for literacy" is, no doubt, biased by my experience as an Adult Literacy program coordinator, teacher and by my involvement in the production of a CALL software package. It is only a personal view, and I recognise the importance of alternative viewpoints. Whatever stance we take, we should project a positive future for the integration of information technologies into Adult Literacy and Basic Education practices.

We need more dialogue about information technology and its implications for ALBE training. As Language and Literacy professionals, we have a responsibility to be at the forefront of changes to our understandings of "Literacy". It's comforting to know that someone's heading in the right direction, devoting an entire magazine issue to "Literacy and Information Technology". Keep up the good work.

References

Barker, L. Daly, A. Gadd, N. Keith, B. O Neal, F. Thompson, S. (eds) (1996) Editorial, Fine Print, Vol. 18, No.2, June 1996. p.3.

Corbel, C. (1996) *Computing as Literacy.* Fine Print, Vol. 18, No.2, June 1996. pp.10-13.

Lankshear, C. (1996) *New Times, Old Ways. Will we miss the literacies boat for the new millennium?* Fine Print, Vol. 18, No.2, June 1996. pp.4-9.

Tankard, T. (1996) *Integrating Language, Literacy and Technology Teaching. A Smorgasbord Approach.* Fine Print, Vol. 18, No.2, June 1996. pp.19-21.

Threadgold, Terry (1992) *Poststructuralist theory and the teaching of English.* Reprinted in Deakin University's *Language and Gender Reader.* 1993. Geelong, Victoria: Deakin University. pp.145-156.

Wayman, A. (1996) *From Out-of-Date to "Classic": Making Use of Older Technology.* Fine Print, Vol. 18, No.2, June 1996. pp.22-25.

Reprinted from: Fine Print, Vol 18, No 3, Spring 1996

Using Key Competencies to solve the equation

Dr Ralph Catts

Introduction/Abstract

This paper addresses the nature of the Key Competencies and the implications for workplace Vocational Education and Training. A central theme of the Australian Vocational Training Scheme (or as it is now termed, MAATS) is that training should be articulated so that people can develop and extend their skills and achieve recognition for previous learning. The focus has been on attainment of industry competencies at various levels of the Australian Standards Framework (ASF).

It is argued that there is a need to develop general competencies including literacy and numeracy as part of articulated vocational education and training. The relationship between the Key Competencies and the National Framework of Adult Language, Literacy and Numeracy is explored.

USING KEY COMPETENCIES TO "SOLVE" THE EQUATION

The Key Competencies - What do they mean in industry setting?

The Key Competencies were described in 1992 by a committee of advice to the Australian Education Council and Ministers of Vocational Education, Employment and Training. The "Mayer Committee", as it is known, recommended seven Key Competencies as essential of young people seeking to enter the work force (Mayer, 1992). The seven Key Competencies recommended by the committee were endorsed by state and federal Ministers of Education who approved pilot studies to investigate how to enhance teaching and implement their assessment in senior years of secondary education. Much effort funded by the Commonwealth and undertaken particularly by state agencies has followed but substantive impact on school practices is yet to be described. As a result of the development work, strategies are available for Ministers if they elect to implement the findings.

The seven Key Competencies are as follows:

- Collecting, Analysing, and Organising Information
- Communicating Ideas and Information
- Planning and Organising

- Working with Others and in Teams
- Using Mathematical Ideas and Techniques
- Solving Problems, and
- Using Technology

How are Key Competencies Described?

The Mayer Committee recommended that the Key Competencies be considered at three performance levels. They described the levels as follows:

Performance Level 1. *The competency needed to undertake activities efficiently and with sufficient self-management to meet the explicit requirements of the activity and to make judgements about the quality of outcome against established criteria.*

Performance Level 2. *The competency needed to manage activities requiring the selection, application and integration of a number of elements, and to select from established criteria to judge quality of process and outcome.*

Performance Level 3. *The competency needed to evaluate and reshape processes, to establish and use principles in order to determine appropriate ways of approaching activities, and to establish criteria for judging quality of process and outcome.*

For each of the seven Key Competencies the Mayer Committee provided a specific operational definition and examples for each level, making a set of 21 competency and level descriptions for implementation.

One of the DEET funded projects sought to develop a method to assess students as they demonstrate Key Competencies in workplace settings. The students were placed in what is termed "traditional" work experience, where the student is placed with a firm, normally for a block of one or two weeks, and without structured workplace training. The placement is seen as an opportunity for a student to learn more about an occupation as part of the process of making a career choice.

Employers, teachers and students were asked to identify examples of each Key Competency which they observed while students were involved in work experience placements. The examples of the Key Competencies generated by the focus groups were refined and then submitted to expert panels for verification of the Key Competencies implicit in the workplace activities. From an initial pool of 500 examples, a pool of 240 were identified that satisfied this investigation of content validity and these items were then trialed with 125 students drawn from ten High Schools to identify utility in a wide range of industry settings. Examples of the types of work place activities for the Key Competency, *Collect, Analyse and Organise Information,* are presented below. together with the level descriptors provided by the Mayer Committee. It should be noted in the level descriptors that all aspects are required to demonstrate competence at the relevant level, as emphasised by bolding added for this purpose.

Performance Level One. *The person follows existing guidelines for the collection, analysis and organisation of information,* ***and*** *accesses and records information from given sources,* ***and*** *organise information into predetermined categories,* ***and*** *checks information for completeness and accuracy.*

Examples of tasks performed at this level, as identified in focus groups and validated by expert judges, are:

Sort job cards into given categories

open, classify and prioritise mail, and

check for out of date stock.

Performance Level Two. *The person clarifies the needs of the audience and the purpose of the information,* ***and*** *accesses and records information from a variety of sources,* ***and*** *selects categories or structures by which to organise information,* ***and*** *assesses the information for accuracy and completeness.*

Examples of tasks performed at this level by students in work experience placements include:

changing records to include updated information,

making up appropriate categories in which to sort items.

Performance Level Three. *The person defines the needs of audiences and the purpose of the information,* ***and*** *critically investigates sources to identify and distil relevant information,* ***and*** *identifies within information the main organising categories and structures,* ***and*** *evaluates the quality and validity of information.*

Tasks performed at level three are likely to be observed in circumstances where the person has prior relevant employment, or specific prior training. With the introduction of vocational education in years 11 and 12 and with an estimated 30% of year 11 and 12 students in paid employment for more than 4 hours per week (ABS, 1996) it is possible for a small number of year 11 and 12 students to have the relevant prior learning needed to operate at this level. In exceptional circumstances, year 11 and 12 students have demonstrated level three of this Key Competency. Examples included:

designing and implementing a file index system,

establishing and maintaining a records system including agendas, decisions, and follow up advice for a committee.

Are the Key Competencies Important?

Two factors of central importance to the use of Key Competencies in the Australian education and training system are the practical relevance of the Key Competencies to employers, and the relationship of the Key Competencies to the National Training Agenda. The first factor will determine the extent to which employers seek assessment of the Key Competencies, and hence the emphasis placed upon them in education and training. The second factor, it is argued below, could well determine the longer term viability of the Australian Vocational Training System (AVTS) which has now been repackaged as the Modern Australian Apprenticeship and Training Scheme (MAATS).

What employers say about the Key Competencies.

At present very few employers are aware of the Key Competencies as an explicit set of capacities, yet most are familiar with the concepts and employ evidence of the presence of at least some of the Key Competencies in recruitment. (NIEF, 1995) When asked to comment on the Key Competencies, employers agree that they are important skills for employment and useful for young people to acquire. This has been illustrated in a recent survey of 89 small and medium size Queensland employers. After being informed about the Key Competencies in the context of work experience for senior secondary students, their views were obtained about the Key Competencies. Their responses are summarised in Table One. Ninety-four per cent agree with the proposition "It is important for people looking for employment to have the key Competencies", and eighty-four per cent agreed that "If I were to look for an employee a Key Competencies report from Work Experience would be useful".

TABLE ONE

Employer Support for the Key Competencies (*)

Proposition	Per Cent Agreement
Would consider in recruitment	84.3
Important for Young People	94.4

(*) Based on responses from 89 employers.

How Key Competencies differ from industry standards

The Mayer Committee sought to differentiate the nature of the Key Competencies from Industry Competency Standards. They argued that the Key Competencies differ from Industry Standards in three important aspects which are presented, as they were in the committee report (Mayer, 1992) in Table Two.

TABLE TWO

Mayer Comparison of Key Competencies with Industry Standards (*)

Characteristic	Industry Competency Standards	Key Competencies
Focus	Describes requirements of jobs	Describes what a person can do
Scope	Generally Industry Specific	Generic to industries and jobs
Orientation	Mainly current, but encouraged to be forward looking	Future

(*) Reproduced from Mayer 1992, p 17.

While at a conceptual level the distinction is evident from the above argument, the difference in a practical sense needs careful amplification. Observing the presence of Key Competencies necessarily involves a specific workplace context. For instance, using mathematical Ideas and Techniques at what the Mayer Committee defined as level one is essential in many occupations. However the following specific examples provided by the Mayer Committee (1992, p35) illustrate the issue of context in obtaining evidence that a person can demonstrate the Key Competencies.

> estimating the amount of cement required for a bricklaying task,
>
> calculating and measuring medicine doses.

The first thing to observe is that such examples necessarily involve contextual knowledge, and consequently a person who is competent at level one of the Mayer Key Competency, Using Mathematical Ideas and Techniques, may require contextual knowledge before they can perform a task in a specific workplace setting. Nonetheless, provided they can use other Key Competencies, such as "Communicating Ideas" and "Collecting, Analysing and Organising Information", to gather the contextual information required, they should be able to achieve the outcome specified. Thus one of the distinguishing characteristics of Key Competencies is that they are commonly employed together to achieve effective outcomes. This is an essential difference between Key Competencies and Industry Standards, at least as they are often assessed in training programs.

In curriculum design terms the Key Competency, Using Mathematical Ideas and Techniques, constitutes the underlying knowledge in each and any workplace setting on which the industry competency relies. Be the industry competency "calculating quantities of cement", "calculating medicine doses" or any other calculation task, the concept of "calculating" emerges as crucial to performance in the workplace. Moreover, it is the Key Competency which is essentially the transferable skill, not the specific application to a particular industry task. That is why Mayer calls for Key Competencies to be demonstrated in more than one context.

TABLE THREE

Reconceptualisation of the Comparison of Key Competencies with Industry Standards

Characteristic	**Units from Industry Competency Standards**	**Each Key Competency**
Curriculum Relevance	Generate Learning outcomes and Assessment Criteria	Generate learning outcomes that specify underlying knowledge
Assessment	Normally can be assessed independent of other units of competence	Normally are observed in concert with other Key Competencies
Context	Performed within Range of conditions applicable to industry	Performed in wide range of contexts across all industries
Performance	Dichotomous outcomes, ie Competent or not yet competent	A continuum of outcomes, classified for use into three categories

While at level one examples of the Key Competencies are "concrete", the examples generated at level three are more complex and necessarily involve tasks that require the integration of several steps. These tasks call for global assessment, rather than the separate assessment of specific components. One example of the Key Competency, Using Mathematical Ideas and Techniques, cited by Mayer at level three is "designing and making a feed container to hold a specific amount and to fit into a specific location". This example involves other Key Competencies including "Collecting, Analysing and Organising Information" and "Using Technology". It also requires contextual knowledge including the tool skills needed, and a knowledge of materials. It is concluded that the differentiation of the Key Competencies from Industry Standards can be represented by the constructs presented above in Table Three.

The Role of Key Competencies in the Australian Vocational Training Scheme.

The Key Competencies are considered by some to be primarily concerned with general skills that should be developed in schools to help young people in their preparation for work. The Mayer Committee however, while concerned with skills required of all young Australians, described Key Competencies as having a broader relevance to employment. Mayer, in the forward of the report described the Key Competencies as "fundamental to our future economic competitiveness" and as "essential for effective participation in the emerging patterns of work and work organisation". Moreover, as noted above, the Key Competencies were presented at three levels of which level one was seen as essential for work at entry level, while level three was seen as more challenging, but attainable. Consequently, it is evident that the Key Competencies were perceived as capacities that would complement Industry Competency Standards.

The relationship has been illustrated in several studies of the capacities utilised by people in various work settings. In a study commissioned by the National Training Board, Rumsay (1995) investigated the levels of the Key Competencies evident in one hundred and twenty industry sector competency standards. With two exceptions, he reported that all Key Competencies are required to some degree in all industry standards investigated. The exceptions were the exclusion of "Working with Others and in Teams" from the Restricted Electrical Licensing Standard, and "Using Mathematical Ideas and Techniques" from the Live Stock Transporter Standard.

Of much significance for the future of industry training, Rumsay demonstrated that the level of each Key Competency required, increases with the ASF level of the units of each industry standard. For instance, in examining units of competency required for the Dairy Farming Industry, Rumsay reported that for competencies required of farm hands operating at ASF level one or two, there was negligible need for three Key Competencies namely "Using Mathematical Ideas and Techniques", "Solving Problems", and "Working with Others and in Teams". In contrast, for the ten units of competence that represent the highest level of competency for Dairy Farming, Solving Problems is required at level three in all cases. Working with Others and in Teams is required in all cases and at level three for six of the ten competencies. Using

Mathematical Ideas and Techniques is required for nine of the ten units of competency, and at level three for four of these units. (Rumsay, 1995, p81)

Similar findings have been reported in a study by the National Industry Education Forum (NIEF). In collaboration with a major firm in each of eight major industry sectors, the NIEF sought to determine the extent to which each firm currently uses Key Competencies in their recruitment of staff and described the level of Key Competencies required to perform various jobs within each firm (Stanton, 1995). They concluded that all firms surveyed implicitly employ the Key Competencies in recruitment. They also confirmed that the level of Key Competencies required increases with the ASF level of the job. This is well illustrated by the example of Terminal operators in the oil industry. Terminal Operators are classified at six levels with level one being an entry level operator required to work under direct supervision, while a level 6 operator has a substantial supervisory and management role. Entry level operators (T01) were found to require six of the Key Competencies, all at level one.

There is an increment in the levels of Key Competency required across the six classification levels leading to the requirement for all seven Key Competencies at level three for Terminal Operators at the sixth level (T06). These findings are reported in Table Four which is drawn from the NIEF report.

TABLE FOUR

Key Competencies Required of Oil Industry

Terminal Operators, T01 to T06 (*)

Position	Collecting, Analysing, and organising Information	Communicating Ideas and Information	Planning and Organising	Working with Others and in Teams	Using Maths Ideas and Information	Solving Problems	Using Technowledgy
T01	1		1	1	1	1	1
T02	1	1	1	1	1	1	1
T03	1	2	2	2	2	2	2
T04	2	2	2	2	2	2	2
T05	3	2	3	3	3	3	3
T06	3	3	3	3	3	3	3

(*) Adapted from Stanton, 1995b, 11

BEST COPY AVAILABLE

Another study has confirmed that not all Key Competencies are required for many entry level jobs classified as apprenticeships. Gonczi et al (1995) examined evidence about the nature and the importance of the Key Competencies in five industries, namely Metals, Electrical, Hairdressing, Hospitality, and Timber and Building Materials. As with other studies, they found little explicit knowledge about the Key Competencies among people in business and industry (Gonczi et al 1995, 10), but found that in all occupations most Key Competencies are necessary for staff to carry out their normal range of duties. While in this study, levels of the Key Competencies were not investigated, they found that for apprentices, not all the Key Competencies were required. For instance there was limited need for Collecting, Analysing and Organising Information among apprentices in the Metals Industries, and little need for using Mathematical Ideas and Techniques among apprentices in all five industries.

The National Framework of Adult English Language, Literacy and Numeracy.

The Australian Committee for Training Curriculum (ACTRAC) which is now part of the Standards and Curriculum Council of ANTA (The Australian National Training Authority), has published a National Framework of Adult English Language, Literacy and Numeracy Competence. The framework postulates what it terms three stages of competency, namely Assisted Competence and Collaborative Competence.

Assisted Competence involves

- using language, literacy and numeracy for contexts which have a practical and personal orientation
- assisted learning
- taking responsibility for one's own learning in limited ways
- communication requirements of jobs which require a limited degree of independence
- shifting from one cultural/linguistic context to another. ACTRAC, 1994 p19.

An example is cited of students planning a group report and writing parts of the report.

Independent Competence is described as

- *learning to use language, literacy and numeracy for engaging in a variety of contexts and for reflecting on the relationships between these contexts*

- *independent learning*
- *taking on higher levels of independent responsibility*
- *the communication requirements of jobs which require some degree of independence*
- *adapting the skills of one culture/linguistic context to another.* ACTRAC, 1994 p19

An example is cited of students writing independent reports after learning how to write group reports.

Collaborative Competence is defined in the following terms.

- *learning to use language, literacy and numeracy for acknowledging different perspectives and reflecting on the relationships between these different perspectives*
- *collaborative learning and mentoring*
- *accepting responsibility as a member of a group, organisation and the larger community*
- *jobs that require collaborative work and coordinating responsibility*
- *a fully multicultural context, where people move backwards and forwards between differing cultural and linguistic/mathematical knowledge, skills and attributes and where differences are used as a positive resource.* ACTRAC, 1994 p20.

The framework presents six "aspects" each of which has a related form of communication. The six communication components are "procedural", "technical", "personal", "public", "systems", and "cooperative communication". Examples of each type of communication are provided. For example, procedural communication is required in paying a telephone bill, while technical communication is evident when using an answering machine. Communicating in groups is evident when working in a team and systems communication is required to interact with an organisation by applying for sick leave.

How do Key Competencies Relate to the National Framework?

There are links between several of the Key Competencies and the six aspects of communication. The examples cited above could easily have come from the Mayer Report. While Communicating Ideas and Information is consistently involved, the examples also incorporate "Using Mathematical Ideas and Techniques", "Working with Others and in Teams", "Using Technology", and "Collecting, Analysing and Organising Information". The Key Competencies are however a broader conceptualisation of skills needed in all work situations, involving additional competencies in "planning and organising" and "solving problems" and additional aspects of other competencies especially in using technology, and "collecting, analysing and organising information".

Superficially there are similarities also between the three levels of the Key Competencies proposed by the Mayer Committee and the three "Stages of Competence" adopted in the National Framework. The framework defines "competency" as a continuum, and shares this model with the Key Competencies. It also classifies competence into three levels for assessment and reporting purposes. The stages of the framework are, however focussed on the teaching and learning process whereas the Key Competencies reflect general outcomes of learning as observed across various situations.

At level one of the Key Competencies *involve undertaking activities efficiently and with sufficient self-management to meet the explicit requirements of the activity and to make judgements about the quality of outcome against established criteria*. The Assisted Competence stage in the Framework involves *taking responsibility for one's own learning in limited ways, and demonstrating communication in jobs which require a limited degree of independence.*

At level two the Key Competencies involve *activities requiring the selection, application and integration of a number of elements and selecting from established criteria to judge quality of process and outcome*. The Independent Competence stage in the Framework involves *taking on higher levels of independent responsibility and the communication requirements of jobs which require some degree of independence*.

At level three the Key Competencies involve *evaluating and reshaping processes, establishing and using principles in order to determine appropriate ways of approaching activities, and establishing criteria for judging quality of process and outcome*. The Collaborative Competence stage in the Framework involves *accepting responsibility as a member of a group, and jobs that require collaborative work and coordinating responsibility*.

The Role of the National Framework

The three stages of competence described in the National Framework make sense within the domain of Adult Basic Education. The framework defines "competence" as a continuum, whereas in industry competency is defined as a dichotomy which persons demonstrate in an absolute sense through assessment as either "competent" or "not yet competent". The framework is concerned with learning contexts, whereas industry competencies describe what people can do in the workplace, irrespective of how or when the competency was acquired.

Why therefore was it necessary to add the word "competence" to the title, the National Framework of Adult English Language, Literacy and Numeracy? The justification presented (ACTRAC, 1994, p11) is that it makes explicit that competence in literacy, language and numeracy is context specific. While this is a justification for the publication of the Framework, it does not justify adding to the confusion about the notion of competency. While the authors emphasis that they are using the term "competence" in contrast to "competency", this is too fine a linguistic distinction, and inevitably has lead to confusion.

The national framework is a tool for curriculum developers and for basic education teachers. It can contribute in this role to the development of an articulated training system. It should be used in conjunction with the Key Competencies to ensure that the Australian Vocational Training System leads to viable lifelong learning (OECD 1996).

Post script - Looking for Evidence of Key Competencies

The NIEF study confirms that among large firms there is an emphasis on using Key Competencies for recruitment. This reflects the perception that specific industry competencies are easier to achieve through industry training than the development of Key Competencies. It follows that all employers should look for evidence of the Key Competencies in recruiting staff. This may translate into a demand for better evidence of Key Competencies from school and from TAFE assessments, with significant consequences for the design, delivery and assessment of post-compulsory education and training.

Evidence from the United States indicates that such demands may emerge in Australia. In 1995 the American College Testing Program launched a new battery of assessment instruments for use at year 12 level or equivalent. The work keys Scales include Applied Mathematics, Applied Technology, Observation, Teamwork, Locating Information, Reading for Information, Listening and Writing. The parallels with the Mayer Key Competencies are obvious. Likewise the Organisation for Economic and Cultural Development (OECD) has launched a major project which targets enhancing the transition from school to work in the context of lifelong learning (OECD, 1996). Key Competencies are likely to be seen as an integral part of the response in Australia.

Surely the questions are not if the Key Competencies will be formally assessed in schools and in TAFE, and if they will be formally integrated into work place training, but rather the questions are how, and when will this occur.

REFERENCES

Gonczi, A; Curtain, R; Hager P; Hallard, A; and Harrison, J. *Key Competencies in On-the-Job Training* UTS, 1995.

Mayer E (Chair) *Key Competencies* Report of the Committee to advise the Australian Education Council and Ministers of Vocational Education, Employment and Training, September 1992.

National Framework of Adult English Language, Literacy and Numeracy Competence, ACTRAC, Vic, 1994.

OECD *Lifelong Learning for All*, Paris, 1996.

Rumsay D. *Key Competencies in Industry Standards* NTB, Canberra, 1995.

Stanton J, Wagner R and McLeish A, *Business, Industry and Key Competencies* NIEF, Melb, 1995a.

Stanton J, Wagner R and McLeish A, *Business, Industry and Key Competencies, Case Study Data* NIEF, Melb, 1995b.

Work Keys Administrator's Manual, American College Testing Program, Iowa, 1995.

Quality & Competency Based Education and Training

Clive Chappell

Introduction

The past decade has witnessed unprecedented changes in the social, political and economic contexts in which work is organised in post-industrial societies. More people than ever are involved in paid work while more people than ever are unemployed or under employed. Those of us in paid work are working harder while those of us without work are unemployed for longer. The less work there is for young people the more education appears to be focussed on developing the skills and abilities needed to participate in work.(Kalantzis, 1992). Vocational education and training is being asked to become more general while general education is being asked to become more vocational.(AECRC, 1991) Future work is said to need a more flexible workforce while at the same time industries and enterprises are asked to develop national standardised work descriptions (NTB, 1993). Given these contradictions it is not surprising that there is a great deal of confusion and antagonism among those practitioners who are being asked to implement changes to post-compulsory education and training. School and TAFE teachers, workplace and industry trainers, university lecturers and human resource development personnel are being asked to implement major changes to education and training in a policy environment which is itself in a state of flux, giving off mixed, and in some cases, contradictory signals. Nowhere has this been more evident than in the move to establish a national system of competency based education and training. The central concern of this paper is the quality of competency based education and training (CBET) curricula.

Background

The development of competency standards and the subsequent move to competency based education and training in Australia was painted by governments as a 'silver bullet' solution to a number of complex problems. It would facilitate award restructuring negotiations and related industrial relations issues. It would enhance the development of a highly skilled, flexible workforce capable of responding to the uncertainties surrounding the globalization of national economies and it would also contribute to increasing the efficiency, accountability and productivity of Australia's post-compulsory education and training systems. The argument I pursue here is that these grand claims overshadowed educational uncertainty surrounding the value of competence as an organising principle for vocational education and training curricula. I also suggest that many current competency based education and training curricula have been developed more to meet the needs of the industrial reform agenda and the requirements for national accreditation than the needs of teachers, trainers and learners. This has, in some cases, led to the production of competency based curricula that either ignore or impoverish the largely implicit learning outcomes that have been the traditional goals of many vocational education and training programs.

Competency based education and training

The emergence of 'human capital' theory as an economic organising principle in all OECD countries has been a feature of the nineteen eighties and nineties. Its manifestation in Australia can be found in the moves to link employment, industrial relations and education with the economic priorities and policies of the federal government.

> *" If industry is to meet its skill needs in the future, it needs to adopt a long term commitment to training so that it becomes a central part of industry's and the nation's economic strategy..........Employer bodies and unions will play the major role in award restructuring. A key issue will be training associated with new job classifications and career structures.............As we move towards a system of remuneration more closely related to skills and productivity, it will be necessary to develop competency-based training arrangements. Training program will need to be developed to meet the recognised standards of a job so that the competence of a trainee can be tested against these standards."* (John Dawkins Minister For employment Education and Training Feb 1989 Industry Training in Australia-The Need for Change.)

Today, the majority of Australian industries either train or recruit members of their workforce who have completed nationally accredited competency based education and training programs; these programs being based on competency standards, developed by industry and endorsed by government. The first point to make here is that these competency standards were seen as **multi-purpose instruments** for industries and organisations. I do not intend to go over all of the uses that competency standards were claimed to offer industry, except to say that I believe their multi-purpose use has overshadowed and to some extent delayed a more rigorous investigation of their impact on the quality of vocational education and training curricula. This should not be taken to mean that the industrial arena is irrelevant in the debate over competence. However educators, not industrial relations practitioners, are best placed to determine the nature, use and misuse of competence and its application in the learning process. Competency based education and training involves, after all, a theory about learning, a theory of curriculum and a theory of assessment (Kinsman 1992)

Central to the educational debate over Competency Based Education and Training is the **concept of competence** that is used to underpin both competency standards development and subsequent curriculum development practices.

Concepts of Competence

The issue of competence has been debated in education for some time (see Chappell, Gonczi & Hager in Foley G (1996) Understanding Adult Education and Training), however there has been little acknowledgment that competence is a **constructed concept**. The concept has no meaning beyond that given to it by those that use it. This inturn suggests that its meaning and form is inevitably shaped by the context in which the concept is used. Given its multi-purpose use in the National Training Reform Agenda it should come as no surprise that the concept of competence is constructed differently by the different players involved. For the purposes of this paper I will restrict my comments to two constructions of competence that have commonly been identified. These are the narrow and broad view of competence.

Competence—a narrow view

The model of competence used, most extensively, in vocational education and training was developed by the American defence forces in the 1950s. Competency-based training (CBT), as it came to be called, is based on the view that standardised training outcomes can be achieved by all learners if a thorough analysis of the behaviours demonstrated by any competent performer is undertaken and then transposed into a set of standardised learning sequences. With its origins in the training of people to develop technical competence and its theoretical base grounded in behavioural psychology, CBT took on a 'curriculum as technology' approach to learning. In this approach curriculum is seen as a tool to achieve pre-specified training goals which can be most effectively achieved when the curriculum operates within a highly controlled learning environment (Blachford 1986).

This approach has come under sustained criticism. It is said to take a technical-instrumental view of work ignoring the crucial position of human agency (Ahearn 1993). It is also accused of trivialising work and ignoring the fundamental changes which have occurred in modern work organisation (Mathews 1989; Field 1990). Methodologies used to surface work related skills are said to miss crucial attributes required of workers when performing their work roles (Gonczi et al 1990). The narrowness of the approach manifests itself in CBT curricula in a number of ways.

Firstly, the narrow definition in itself limits the content of the course. An over-emphasis on technical task skills leads to the omission of general social, intellectual, and emotional abilities. The narrow definition also proposes that competence must be measurable, and therefore requires that course outcomes are written in ways that make them measurable.

A third related feature of the narrow definition is its insistence that there are single acceptable outcomes and single correct pathways to acceptable outcomes. In most workplace contexts there are a range of acceptable possible outcomes and ways in which work outcomes can be achieved. The narrow definition of competence over-emphasises behaviour at the expense of this cognition. While recognising that knowledge, practical skills and attitudinal requirements are essential to successful performance, CBT reifies these attributes into behaviours by insisting that they be expressed as 'behavioural' objectives. Behavioural objectives are seen as the cornerstones of CBT, becoming the organising framework for the instructional design process (Wilson 1987).

A fourth flaw in CBT is that it objectifies performance; it separates the subject (performer) from the object (performance). Objective performance as constituted by CBT is viewed as separate from, independent of and privileged over the subjective performer. Performance therefore is alienated from the work experiences of people; firstly by the use of disintegrating behavioural objectives which atomise and make unrecognisable real work, and, secondly, through positing competence as separate from and independent of the individual worker.

Finally CBT also raises the individual learner above that of the learning group. The process of learning is seen as beginning and ending in the acquisition of pre-specified task competencies. CBT in fact suggests that group learning is detrimental to individual learners. It holds back 'quick learners', it wastes learners' time or it forces teachers and trainers to aim at the average learner at the expense of the fast learner.

This conception does however hold, for some users, distinct advantages. It suggests that training can be standardised and controlled. It suggests that assessment can be a neutral, explicit and value free activity. It suggests that learning can occur independent of the sorts of processes adopted by teachers and learners in the learning process and finally emphasises learning outcomes that are transparently connected with work.

Competence—a broad view

The language currently used to explain competence in government-sponsored industrial and educational reforms in Australia seeks to distance itself from the narrow view which characterised the CBT movement. A literature review conducted by the NSW VETAB revealed that there was almost total support from commentators for a conception of competence more broadly defined (NSW VETAB 1994). The National Training Board (NTB 1991) early in the development of competency standards endorsed *'a broad concept of competency in that all aspects of work performance, and not only narrow task skills, are included'* (NTB 1993, p. 29). The Finn and Mayer reports also proposed sets of 'key competencies' generic to all forms of work. This re-definition however, while moving considerably from that held by the behaviourists in the CBT movement, continued to emphasise performance and outcomes over knowledge, cognition and the other attributes of effective performance. The NTB position was accused of totally ignoring the crucial importance of knowledge and understanding in the actions of human beings, be they in the workplace or elsewhere. The NTB was also accused of harbouring a technicist view of work closely aligned to an industrial production model of competence.

Critics argued that work involving a high degree of personal interaction and sensitivity to the needs of others cannot be judged entirely by outcomes(Chappell C & Hager P 1994). A patient who suicides, a dissatisfied customer, or a disgruntled art critic cannot necessarily be attributable to the incompetent performance of the psychiatrist, shop assistant or artist. These criticisms led the Community Services Industry to redefine performance and outcomes in terms of expectations of performance and demonstrable and/or *defensible* performance (National CS & Health, ITAB 1993, p. 29).

This broader view of competency-based education and training does not confuse performance with competence, and argues that a large variety of attributes which underpin performance must be addressed in competency based education and training programs. It rejects single acceptable outcomes as being indicative of competent performance, proposing that in most situations multi-variable contexts inevitably lead to multi-variable acceptable outcomes. It argues that the processes undertaken by the worker during work activity are often a more valid indicator of competence than the products or outcomes of work. It emphasises human agency and social interrelations in competency descriptions. It regards competence as developmental and elaborative rather than static and minimalist. It places great importance on groups of practitioners coming together and, through a process of debate and dialogue, developing competency descriptions of practice that can inform curriculum development. It does not attempt to create the illusion of objectivity by developing a litany of precise measurable outcome statements each of which need to be 'measured' prior to competence being determined. It views descriptions of competence as being open to re-negotiation and change, and does not view competency descriptions as objective truth statements standing outside of and independent of the contested views of work found within the workplace.

Competency Standards and Curriculum

For educators the most contentious aspect of competency standards development was its connection with Competency Based Training (CBT). It seems clear from the Dawkins quote referred to earlier that this connection was uppermost in the minds of policy makers early in the formulation of the National Training Reform Agenda. What is less clear is the form that this connection might take. The priority given to the industrial and economic reform agenda including the development of competency standards, was not reflected in any priority being given to the development of new competency based education and training models. Indeed the first attempts at producing CBT courses, were based on the precepts of behavioural psychology and involved resurrecting old, and largely discredited, models of CBT.

> *"The competency-based trade training system should comprise two components: competency-based instruction; trade training characterised by precise definition of skills to be achieved to specified standards and under specified conditions which become the performance objectives for the instructional process both on and off the job."* (DOLAC 1988:12)

In these models learning is regarded as unproblematic. The learner is presented with a set of standardised learning activities that are seen as moving the learner towards competence in a pre-specified set of tasks. Learning outcomes are also narrowly conceived. As Mansfield (1989) points out:

> *"VET(vocational education and training) delivery agents are capable of analysing a task to within an inch of its life yet the aspects of the work role which are increasingly valued in the economy - adaptability in the face of change, management of roles and systems, taking responsibility for contingencies, standards and output, creativity, flexible responses to new market demands- remain worthy aims which everyone routinely salutes and does little about."*

The attributes outlined by Mansfield are not capable of being codified in the same way as that proposed by the Department of Labour Advisory Committee(DOLAC) yet, as the Mayer key competencies suggest many of these attributes are essential goals of education and training. The failure of the traditional CBT curriculum to address these issues comes about because of its limited view of learning outcomes. It sees learning outcomes solely in terms of the competent performance of tasks and ignores the equally important learning outcomes achieved through the ***processes of learning*** undertaken by learners. Thus the traditional CBT curriculum is incapable of delivering those attributes foreshadowed as being essential in contemporary work environments.

The issue of quality in competency based curricula

Different conceptions of competence have informed competency standards development. Standards developed on the basis of these different conceptions have also been used to develop competency based education and training curricula. Thus standards that have failed to incorporate the underpinning attributes of performance legitimise the use of CBT models based on behaviourist notions of competence while standards that reflect these attributes necessitate the use of different competency-based curriculum models. These models necessitate incorporating learning processes that are consistent with the development of these attributes. For example it would seem inconceivable for a curriculum that espoused the development of problem solving ability to overlook problem setting and solving in the learning processes embedded in the curriculum.

There are a number of different competency based curriculum models that do integrate both the content and processes of learning. For example Independent learning can be a feature of many curricula as can peer and group learning. Collaborative learning, learning contracts and self-assessment procedures can also be found as curriculum features that address both outcomes and processes.

One example of this approach is problem-based learning (PBL). The principal idea behind problem-based learning is:

'....that the starting point for learning should be a problem, a query or a puzzle that the learner wishes to solve.' (Boud & Felletti 1991: 6).

The problems posed in PBL courses are central to the experience of learners and, therefore, are said to avoid many of the difficulties that are found in more traditional education programs. These difficulties include issues of relevance, learner experience, and the difficulties associated with the 'front-end' approach of many courses, whereby all the knowledge is provided first. Proponents of problem-based learning also argue that knowledge is never static and cannot ever be totally accommodated in educational programs. It therefore views the goals of education as developing the skills to learn new knowledge quickly, effectively and independently. The problem-based approach is seen as a way of developing these skills.

Boud and Felletti also suggest that PBL enables learners to practice and develop a number of generalisable competencies including:

- adapting to and participating in change
- dealing with problems
- making reasoned decisions
- reasoning critically and creatively
- adopting a more holistic approach to work
- practicing empathy and collaborating in groups
- identifying personal strengths and weaknesses
- undertaking self-directed learning.

and these generalisable competencies are clearly consistent with many elements of the Mayer key competencies and with a number of other attributes seen as being important in contemporary society.

The Way Forward

Many teachers are being asked to develop and deliver competency-based programs that are informed by competency standards of highly variable quality. Standards that fail to incorporate crucial attributes of practice lend themselves to a technico-instrumental CBT curriculum that concerns itself with narrowly defined and atomised task outcomes. Many teachers are therefore faced with the dilemma of not only implementing a curriculum that flies in the face of their understanding of learning theory but also fails to consider the crucial importance of the learning process in the development of those generalisable competencies that are regarded, by many, as the

80

primary aim of education. However there are a number of possibilities for teachers caught in this dilemma.

Firstly every effort needs to be made to point out the inadequacies of poorly developed competency standards and any subsequent impoverishment of curricula developed from these standards. Teachers need to point to these inadequacies and omissions and bring them to the attention of the development body. This could be done through their professional association or when they are asked to develop, review or evaluate their programs.

Secondly teachers need to re-assert the importance of learning processes in developing important attributes of practice and insert them where possible in their own teaching practices. They need to broaden the debate regarding learning outcomes and establish and make explicit the link between the processes of learning and crucial outcomes of learning.

Finally and perhaps most importantly they must use every opportunity to point out the contradictions found within current educational policy which while calling for a major upgrading of educational outcomes, including the development of a number of generalisable competencies is at the same time seen as promoting a curriculum model (CBT) that frustrates the possibility of such development.

References

Australian Education Council Review Comittee(AECRC), 1991*Young People's Participation in Post-Compulsory Education and Training*, AGPS, Canberra

Ahearn in Smith D. L (ed) 1993 *Australian Curriculum Reform: Action and Reaction* Australian Curriculum Studies Association

Blachford K 1986 *Orientations To Curriculum in TAFE* Hawthorn Institute of Education

Boud & Felletti 1991 *The challenge of Problem Based Learning* London Kogan Page

Chappell C S, Gonczi A & Hager P 'Competency-based Education' in Foley, G (ed) 1995*Understanding Adult Education and Training* , Allen & Unwin, Sydney

Chappell C S & Hager P 1994 Values and competency standards in *Journal of Further & Higher Education* London

Dawkins J 1989 *Towards a Skilled Australia* Canberra AGPS

Department of Labour Advisory Committee (DOLAC) 1988 *Trade Training in Australia* AGPS

Field L 1990 *Skilling Australia* Melbourne Longman Cheshire

Gonczi A, Hager P, Heywood L 1992 Research Paper No. 7 *A guide to Development of Competency Standards for Professions* Canberra Australian Government Printing Service

Kalantzis, M 1992, 'Competencies, Credentials and Cultures' *Education Australia Issue 18*

Kinsman M 1992 in *Higher Education and The Competency Movement* Centre for Continuing Education Canberra ANU

Mansfield B. in Burke J W (ed) 1989 *Competency-based Education and Training* London Falmer Press

Mathews J 1989 *Tools of Change new technology and the democratisation of Work* Pluto Press Sydney

National Training Board 1993*National Competency Standards Policy and Guidelines second ed.* Canberra National Capital Printing

National Training Board 1990*National Competency Standards Policy and Guidelines first ed.* Canberra National Capital Printing

National Competency Standards & Health ITAB 1993 *Developing National Competency Standards in the Community Services Industry* Sydney National CS & Health ITAB

NSW Vocational Education and Training Accreditation Board 1994 *Accreditation of Competency-Based Education and Training for a Qualification;aReview of the Literature.* NSW VETAB Sydney

Wilson B 1987 *The Systematic Design of Training Courses Vol 1* Carnforth UK

Woodruffe C 1990 *Assessment Centres: Identifying and developing Competence.* London Institute of Personnel Management

Managing the competency based, multi-level, literacy classroom: what works.

Jean Clarke

ABSTRACT:

This paper examines how one particular teacher has managed the competency based, multi-level literacy classroom. The content of the paper is embedded in the theory of cognitive, affective and individual human development, and the theory of adult teaching, learning and development, It reviews how the teacher has managed to achieve a well managed and happy classroom environment for her students. When CNLO3 was introduced at the beginning of 1995 the process of managing the new curriculum, and a group of multi-level literacy students was a daunting, frustrating and stressful experience. Over a period of time areas such as routine, organisation of program, workstations, time management, resources, peer tutoring, extension program, testing and assessment have been developed and managed to achieve balance and harmony and a positive classroom learning environment. It also explores the roles of alienation, individual attention and volunteer tutoring in process. The ultimate outcome for the teacher has been a happy and rewarding teaching experience. For the students the outcomes have included increased self-esteem and self-confidence, development of independent learning techniques, increased literacy skills and the benefit of a satisfying learning experience. For all of the students this has been a first time experience, the success of which was their re-enrolment in a further ten week course and in other courses in the College.

INTRODUCTION:

This paper is of necessity fairly brief because my main aim is to provide you with stimulation for discussion about the issues of management in the competency based, multi-level, literacy classroom.

'The Impossible Dream!' No, it's not just the name of a song from that wonderful stage show 'Man of La Manchia,' but an attainable dream that was set up as a personal and teaching goal and has been relentlessly striven for ever since the

'The Impossible Dream!' No, it's not just the name of a song from that wonderful stage show 'Man of La Manchia,' but an attainable dream that was set up as a personal and teaching goal and has been relentlessly striven for ever since the introduction of CNLO3 curriculum. Earlier this year this dream was achieved for the first time.

This paper is the story of that dream - the trials and tribulations, experiments and experiences that led to that warm, personal glow that one feels when they have ultimately achieved a goal or dream.

BACKGROUND:

The background to that dream began in Term 2, 1995 when I returned to the classroom in a supply capacity. I had decided to retire and direct my interests elsewhere. Coming to a new group midway through a course is never easy, but with a new curriculum, and at least three levels of students, as well as a number of adolescent behavioural problems, it was survive or die! Since survival has always been high on my list of priorities, that was what happened. However, although most students achieved during the course, I was left frustrated, disappointed and stressed. I knew there had to be a better teaching and learning experience than what had been experienced. It was at that point that I shifted my focus from teaching to management.

What follows is in order, as much as possible, the strategies and experiments that were applied to reach the dream at the end of Term 1, 1996.

CLASSROOM ARRANGEMENT:

When I inherited the previously mentioned group they had already been divided into work stations by the previous teacher. This was the basis for everything that followed. With that same group I proceeded to change the way in which the groups were arranged. At the time this was purely experimental and done in association with the study I was doing in a subject called educational environments. We moved anything that was not fixed - tables and chairs mainly, until we had an arrangement that enabled everyone to still be able to see the blackboard, the most important fixed object in the room. Everyone was able to sit next to friends. However, this was a foreign experience for the students and they had to be convinced about the reasons behind it. It was not so much like school any more, so it did not take much to convince them about its merits.

NOTIONS ABOUT TEACHING AND LEARNING:

The next thing we did was to discuss their notions about learning and teaching. This was almost a disaster. In their minds I was the person responsible for both their learning and the teaching. This was hard stuff to deal with, but slowly we worked together towards their ownership of the learning. Firstly, they had to make sure their outcomes were signed off. By the end of the course they had begun to accept responsibility for their own learning. The lower level students were fortunate in having excellent role members in the Level 3 students, who were not only older and more mature, but had readily accepted the idea and made rapid progress forthwith. At that stage it was the end of the course.

My next group for ten weeks took me out of the College setting into a neighbourhood setting in the students' home territory. Far away from the College my attitude was different, there were no college pressures. There was a sense of freedom that was really present and I practised, experimented and notated all the things I tried. Fortunately, there were not too many failures. However, the successful ideas were those that have been perpetuated henceforth and for evermore. These included instructing students in how to use the class materials they would be handling, instruction in reading and comprehension, developing independence and peer tutoring. Further developments included managing and teaching instruction of particular skills, managing the multi-level curriculum, developing a team ethos and using our tutor effectively.

The students in this group had all been assessed by someone else so I had to get to know them first before we commenced any really constructive work. Through all sorts of tasks I was able to confirm their assessment levels and we worked on group activities for the first week to enable them to get to know other members of the group. By the end of week one they were set up in working groups with peers of the same level, we had arranged a difficult room the way we wanted it, had talked about our motives for doing the course and what their responsibilities and mine would be. We then began work on outcomes for each of their levels.

MANAGING TIME EFFECTIVELY:

The group in this instance included four beginning level readers, two level two students and two level one students. The beginner reading students worked with me as a group. I set them tasks that were orally explained while I worked with other students either in pairs or individually. A tutor took the beginner readers for one morning a week during which time I divided my time between group instruction and discussion and addressing individual skill needs. I also found that I could achieve much progress by splitting the morning tea break and using this to spend short periods on instructional skills - fifteen minutes was not too long a time for students to concentrate on learning a skill, which they went on to practise independently. Other students were not distracted from their tasks either which was evident when I had tried to instruct one group individually using the board, whilst everyone else supposedly worked independently. However, at the end of a three hour session without a tea break, I was mentally exhausted. There had to be a better solution I thought, but I never did work out what. The ten weeks passed quickly and I felt that going without a break had been worthwhile for the students. It also allowed them to get to know at least a few people more intimately and they all became good friends.

USING RESOURCES:

Each other level had class resources provided in a booklet format. These were not very refined in the first instance but the idea was to allow every student to work at their own pace. They were all set out in the same way. Instructions were written in bold, larger than normal type. Each section was clearly delineated from the next. Numbering was used extensively. The students worked with instructions from the start. We discussed the meaning of various terms eg. read. One of the things I did not do was to put the language into very simple terms. Where I used words that were new or difficult, I put the meaning in words that they could understand in brackets. That way, they added new terms to their vocabulary.

READING AND COMPREHENSION:

We also talked about how to use texts. We practised using reading and comprehension strategies. The structure of texts was also examined as well as the purposes for writing texts and different genres.

PEER TUTORING:

Another discussion focussed on peer tutoring - how to best help one another especially in reading, the methods they could use and to give clues first and the correct answer as a last resort. We also talked about what to do if all else failed. . That was when they used me as a resource.

INDEPENDENCE:

Independence was the real key to the success of my overall management strategy. If each student was going to need me all at the same time it simply would not work. Clearly set out resources, in language they could handle, and class discussion before they commenced each session clarified most problems. However, there were times when the inevitable happened and everyone needed me at the same time. However, while they waited all students took time out for some free reading which encouraged them to read for pleasure as well as learning.

DEVELOPING UNITY:

The next issue was how to manage the multi-level curriculum, the various deficiencies that were appearing in written work and more complex reading difficulties.

Because of the diverse nature of this group I was aware that there was potential for the group to be split into two socially. I wanted to encourage the development of the notion of teamwork to put them in good stead to cope with the new, structured workplace into which they would take their rightful place at some point in time. How could this be done?

BALANCING CNLO3 AND OTHER NEEDS:

My decision centred on the curriculum and finding a balance between CNLO3, developing literacy through computers and dealing with the deficiencies in written work that were emerging daily. I settled on two half days for CNLO3, one half day for computer literacy and one half day for group work including reading, spelling, grammar, testing (although I did not use that term), discussion and creative writing. This worked well, although there were severe limitations for the beginner readers when it came to writing and I had to develop some special tasks for them. However, they developed their oral skills through discussions and we learnt about events all over the world that were currently happening through reading current newspaper articles which I enlarged.

TEAM MEETINGS:

The next initiative happened by accident. The level two students required participation in a meeting. How would we do this? I settled on a class meeting to plan a breakup for the end of the course and to assess their progress to date. I demonstrated how to conduct a meeting and we talked about the need for everyone to participate as well as meeting etiquette. They talked about etiquette for all sorts of social occasions, and for sports such as golf. A follow up meeting was held to make the final arrangements for the breakup and regular class meetings were held from thereon to discuss progress. Even the lower level students gained much from this experience - increased self-esteem from participation and the knowledge that what they thought did count, as well as increased self-confidence in oral skills. Their oral skills also showed immense improvement although they were not always aware of this until it was pointed out by me or other students. The ethos of team spirit emerged and further developed as everyone provided a forum for students to present reports, demonstrate safety procedures such as mouth to mouth resuscitation, how to use a fire extinguisher, be participants in surveys and other assorted tasks. At this stage this ten week course ended, with much achieved for students. I was left with much to mull over during the long holiday break.

The experience of Term 1, 1996 could never be repeated, I don't think. It was quite unique! It was like magic when I reflect on it now. There was only one beginner reader, eight level 1 or 2's and one level 3 student. The level 3 student and the beginner were returning students. I still had my tutor for the beginner one session a week.

Class meetings were a regular feature of class life from the start. We focussed on outcomes that relied heavily on oral skills at the beginning of the course and slowly moved into written work. What was different was that we were aiming to complete both LIT101 and LIT102 in ten weeks. We went through the same introductory processes. Students worked independently with their prepared class resources. Each Wednesday we planned what we were going to do with our group time on Thursday, worked out an order of events so that talks, reports, demonstrations, testing and other activities were completed. Because there was much happening of interest in the news this provided the stimulation for our creative writing and discussion - floods and the Port Arthur massacre provided great debating items and meeting etiquette was adapted to the debating situation.

INDIVIDUAL AGENDAS:

However, I was very much aware that there was still something missing for at least some of the students. This was their personal agenda for the course. Four students had as one of their personal goals to improve their reading. Somehow all of what we were doing in class each day and in special extension areas on Thursdays did not meet this goal.

USING TUTORS EFFECTIVELY:

At this point I decided to address this through another tutor for one session a week. This provided each student with one to one reading practice for three-quarters to an hour a week depending on whether they were all there or not. The tutor, student and me met briefly to work out a suitable reading level for the student - one which provided them with confidence in that they could handle most of the reading independently, but had some challenges of new vocabulary. We used *Readers Digest Skillbuilders* for this activity. The students chose what they wanted to read each week and the tutor worked with them on reading and comprehension and extension writing activities. This worked really well. Because they were working on CNLO3 at their own pace they were able to pick up where they left off when they returned from their reading session which was held in an adjacent room.

DEVELOPING A GROUP MAGAZINE:

At about the half way point in the course all the students indicated that they wanted to go on for a further ten week course. We were at the time pressing ahead with the beginnings of a group magazine with their own little biographical profiles, written outcomes, and personal writings. They decided that they wanted to hold that over until the end of the next ten week course. They wanted it to be a memory of the time they had spent together.

RESULTS:

The last class meeting of the first ten weeks proved interesting. Their task for prior consideration was to give an oral report to the group on their progress and what would be their goals for the next ten week course. I never thought the meeting would end. Their reports were all very comprehensive. The 'proof of the pudding is always in the eating' so they say. Their comments on their progress, reiterated over and over again, covered gains in self-confidence and self-esteem, learning to be independent as a student, being part of a team, learning about themselves as persons, preceded all the literacy skills they had acquired. One student commented that he could confidently go to a restaurant and order his own food now. When asked by the others what he had done before, he told them that this girlfriend had always read the whole menu to him, he had then chosen and she had ordered his food so that he did not say the words incorrectly. He also reported that he had read a whole book in his reading sessions with the tutor and at home - his first.

It was at this point that I knew that I had achieved what I had ultimately set out to do - managed the multi-level, competency based literacy classroom effectively to my own satisfaction as well as the students.

The next term followed in the same vein although we had to grapple with some unanticipated events. One of the students had attempted suicide during the holidays and missed the first week of the course. Subsequently, he returned, slotted right back in and completed another one and a half modules. The group provided every support for the student. Another student had a rift with her parents and moved away to the north coast. The group expressed many concerns about what she had done and she remained part of the group in spirit even though she was not there. Illness of another student also promoted the group unity which had developed. Because she lived on her own, at least two students either phoned or called via her home on the way home. They were all quite upset when she was too sick to attend the break up barbecue on the last day. We acquired two new students midway through the course. Neither fitted in very well. One was from a non - English speaking background and no matter how hard the rest of the group tried to make her feel part of the group she simply would not speak to anyone except me. The other student was very ego-centred and individual and did not want to be part of the group. Fortunately, the attendance patterns of these two students was very erratic and did not deleteriously affect the group. Not for one minute did I think that group unity had any influence on their attendance. The social culture of one student was advance warning that this could happen and the previous attendance patterns of the other student in courses in the past had been no different. However, I became aware of two factors that were not manageable, or teachable and which had influenced my management of the group.

PERSONALITY AND GROUP DYNAMICS:

These were personalities and group dynamics. These were outside of my control but had aided everything both the students and I had achieved in the teaching and learning process. For them the experience was real and complete. They had become real friends through the experience. They had supported each other through their problems both personal and educational for the duration of twenty weeks. They left equipped with a new found confidence, some challenges for the future and an independence that would hold them in good stead for the challenges which lay ahead. They left, not only with their group magazine which they helped to produce, but with addresses and phone numbers so they could keep in touch.

CONCLUSION:

It was a magical experience - The Impossible Dream - attained and sustained. Could it ever happen again? Well to date it hasn't even though I continue to use the same strategies. However, every group is different, and working with higher level students as I am at present, precludes many of the strategies that I needed to use in that specific situation. The dream and the ongoing challenge to achieve it again remain.

That was my experience in working towards, and achieving what I consider to be the well managed competency based, multi-level, literacy classroom. What works best for you may be entirely different. Now is your opportunity to discuss the management issues of the competency based, multi-level, literacy classroom as you have experienced it. Here is a framework of questions on which to base your discussions.

QUESTIONS:

1. What are the issues of the multi-level, competency based classroom as you see them?

2. Which of the strategies described have you also used effectively?

3. What strategies have you used effectively as management tools?

4. What have been the benefits for students?

96

Fractions, decimals and adult learners

Tom J Cooper and Shelley Dole

This paper provides "hands on" activities with materials for group use that can facilitate learner's construction of fraction and decimal ideas. Particular attention is given to the part-whole concept of fraction and the base and place value underpinnings of decimal numbers. The paper discusses the strengths and weaknesses of materials (including calculators) and proposes materials and teaching activities suitable for adult learners.

Introduction

The focus of this paper is on the mathematics of decimal numbers and the planning of mathematically appropriate activities useful for assisting a wide variety of learners construct mathematical ideas. Decimal-number knowledge is pivotal to mathematical applications in the real world and, as research has shown (Baturo & Cooper, 1995; Resnick et al, 1989), is built upon knowledge of whole-number numeration and the fraction concept. This relationship is represented in Figure 1.

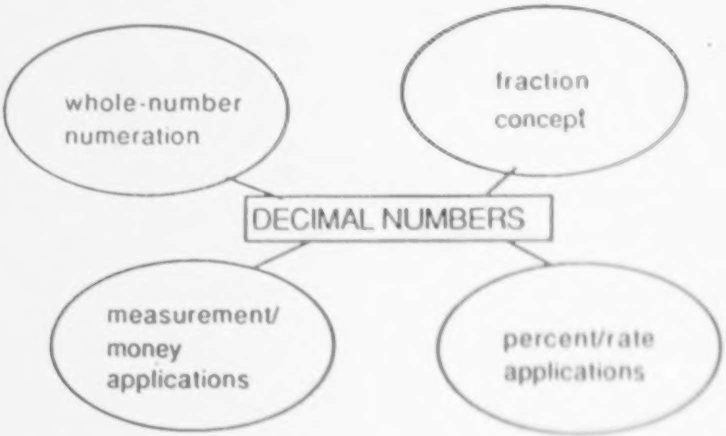


Figure 1: Decimal-number knowledge relationships

In this paper, the relationship between fractions, whole numbers and decimals is discussed and teaching implications drawn. As this proceeds, potentially effective teaching activities are highlighted in boxes.

Mathematics learning and teaching

Mathematical knowledge must be constructed individually by learners and then developed into communicable form through sharing and discussion (Australian Education Council, 1992). As mathematical concepts and principles only exist in the minds of learners, they must be abstracted from examples or extended from previous knowledge by the learners themselves. Thus effective mathematics teaching uses materials and language (questioning) to build learning environments which encourage learners to construct their own mathematical knowledge. The basis of formal mathematical knowledge is, therefore, informal understandings held idiosyncratically by learners (Kaplan, Yamamoto, & Ginsburg, 1989).

Planning of teaching episodes is extremely important. Mathematics is typically a hierarchically subject, and through task analysis, the structure of a mathematics topic and the necessary foundational knowledge and concepts it is built upon can be determined. In this way, important steps in the teaching sequence can be pinpointed. The planning of teaching episodes also requires diagnosis of the learner's knowledge and understanding of that topic. Analysis of both the task and the student's knowledge provides direction for the planning of activities, materials and language to be used in the mathematical teaching episode. The focus of the teaching episode is on facilitating construction of the mathematical idea in the mind of the learner. Thus, the teacher's role is to look at the mathematics, look at the learner, and combine to select appropriate materials, langauge and activites to facilitate construction of the desired mathematical ideas. The planning of teaching episodes is represented diagrammatically in figure 2.

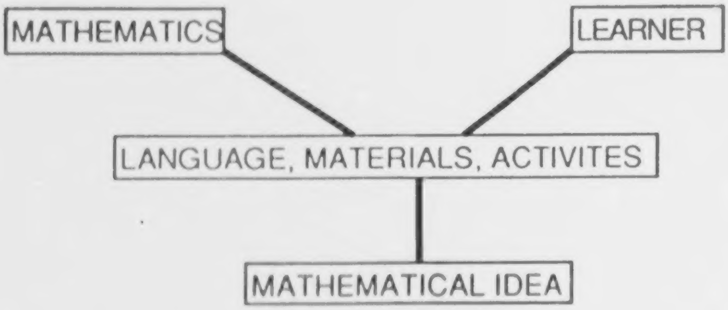


Figure 2: Planning teaching episodes

Whole-number numeration

Decimal numbers have two relationships. The first relationship is syntactic and provides the symmetric pattern for the naming of the place-value positions (see Figure 3 - adapted from Baturo & Cooper ,1995).

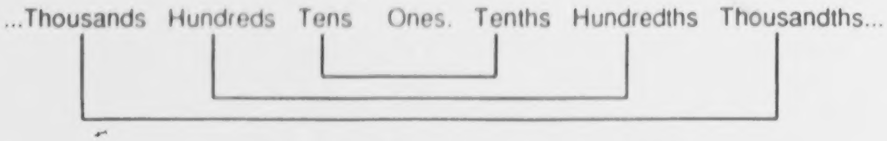


Figure 3: Place-value position names

BEST COPY AVAILABLE

The second relationship is semantic and provides the continuous bi-directional pattern for the value of place-value positions (see Figure 4 - also adapted from Baturo & Cooper ,1995).

| <- x 10 -- | <- x 10 -- | <- x 10 -- | <- x 10 -- | <- x 10 -- | <- x 10 -- |
....Thousands Hundreds Tens Ones . Tenths Hundredths Thousandths ....
| --/ 10 -> | --/ 10 -> | --/ 10 -> | --/ 10 -> | --/ 10 -> | --/ 10 -> |

Figure 4: Place-value position value relationships

As Baturo and Cooper (1995) argued, two misconceptions emerge from these patterns. The first is that learners believe that the decimal point has a position. The second is that the conflict between the two patterns means that the two way relationships (moving left is multiplying by 10, moving right is dividing by 10) in Figure 4 is often misunderstood. To allow a smooth transition from whole-number to decimal-number knowledge, there are two things that need to be highlighted in whole-number learning: (a) that number meaning is built from the ones which are denoted by their position (being the rightmost digit); and (b) that whole-number place-value positions follow the two-way relationship (moving left is multiplying by 10, moving right is dividing by 10).

ACTIVITY ONE:
Materials - calculators; place value charts (hundred-thousands to ones).
Directions
(1) Enter 23 on calculator, write it on place value chart - "What is the value of the 3?".
(2) Multiply by 10, write answer on place value chart - "What is value of 3 now?", "How do we write this number without the chart?", "Why do we add a zero?" [To show where ones are!]. Repeat this until reach 230 000. Ask - "What is pattern here?" [Move left - x 10!].
(3) Divide by 10 - "What is the value of the 3 now?". Repeat this until reach 23. Ask - "What is pattern here?" [Move right - / 10!].
(4) Turn over your calculators - "What do you think will happen if we were to divide by 10 again?", "What is this new place-value position?", "How do we write the number?" [Need to focus on moving to a new position on right of ones and needing a new way to show the ones!]. Turn your calculators up the right way, enter 23 if need to, divide by 10 - "What happens to the 23?".

Fraction concept

Decimal numbers differ from whole numbers in the addition of a new series of place-value positions on the right of the ones. These new decimal positions are all fractions. Hence the notion of a fraction underpins decimal numeration. The common definition of a fraction is that it is part-of-a-whole. It is important for students to develop this concept of fractions. However, this is only one of three concepts required for full understanding of fractions. Fractions can also be conceived as part-of-a-group, and fractions can also be division. Part-ot-a-whole fraction understanding is developed through manipulation of 'wholes' and dividing them into eqaul parts. Common 'wholes' to divide include area and length models. As their titles suggest, area models are any shapes which cover an area (e.g. squares, rectangles, circles) and they be divided in various ways, while length models are shapes (such as strips) divided into equal sections in a linear way. There are five steps involved. The whole is identified, it is divided into equal parts, the parts are named, a number of parts is chosen, and the fraction represented by these parts in the whole is named. The same five steps are followed for developing part-of-a-group understanding except that it is a group or set of 'things' which is divided into equal parts (not an area or a length). This sequence of five steps, together with examples of area, length and set models is presented in figure 5.

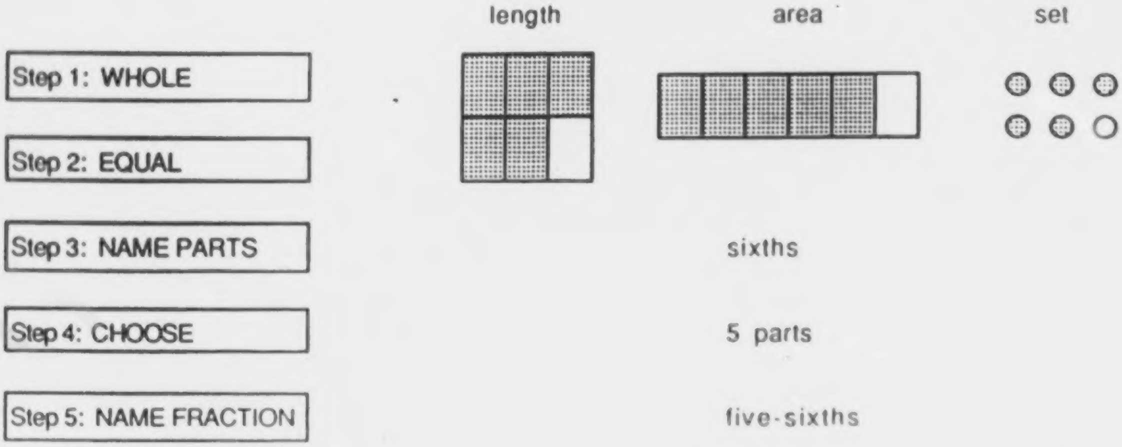


Figure 5: Teaching sequence for fractions

Part-of-a-whole understanding needs to be developed first through manipulation of a variety of models in concrete form. Part-of-a-group and then fractions-as-division notions are developed after rich concepts of part-of-a-whole are developed. The most important aspect of fraction understanding is to always be able to identify, or relate to, the whole. This requires teachers to carefully select appropriate materials, and carefully sequence learning activities. Teachers need to constantly draw students' attention to the whole. This can be difficult depending upon the model selected. For example, when students cut rectangles and squares up and manipulate the fraction pieces, students can easily lose sight of the 'whole', as all pieces have become similar to the whole. Circle models are thus more appropriate. However, fraction models should not be limited to circles only. Students must be given experience with a variety of models to see that dividing any whole (including a whole set) into equal parts produces fractions. One way to focus attention on the whole is always to stress Step 1 in the teaching sequence and make students identify the whole and say "This is one whole" before dividing it into equal parts. Activity two contains basic fraction activities for use with various paper models. All activities are for part-of-a-whole.

BEST COPY AVAILABLE

ACTIVITY TWO:

Materials - paper rectangles, paper strips, paper circles (different colours); scissors; whole-part charts.

Directions -

(1) Fraction rectangles. Take four colours from rectangles. Leave one as a "whole". Fold the second in half and cut into two "halves". Fold the third in half, then half again the other way and cut to make "quarters". Fold the fourth in half, half again in the other way, then half again the first way and cut to make "eighths".
Take four more rectangles of different colours. Roll the first one-and-a-half times, press flat and cut to make "thirds". Repeat this for the second, then fold in half the other way and cut to make "sixths". Roll the third two-and-a-half times, press flat and cut to make "fifths". Repeat this for the fourth, then fold in half the other way and cut to make "tenths".

(2) Fraction strips. Make one "whole", two "halves", three "thirds", four "quarters", five "fifths", six "sixths", eight "eighths" and ten "tenths" from different coloured strips similar to the above but with one difference. Keep all folding in half in the same direction.

(3) Fraction circles. Make one "whole", two "halves", three "thirds", four "quarters", five "fifths", six "sixths", eight "eighths" and ten "tenths" from different coloured circles similar to the above for the first four but with special folds needed for "thirds" and a protractor needed for "fifths". For "thirds", fold the circle in half and crease. Pinch the centre of a fold another way. Open out and mark the centre (where the pinch crosses the crease line). Fold one of the sides where the crease line cuts the circle (the edge) into this centre and crease. There should be a "T" creased into the circle. Join where the bottom and two sides of the "T" meet the circle to the centre of the circle and "thirds" are made. "Fifths" can be made by using the protractor and having 72 degrees between lines.

(4) Use rectangles, strips and circles to: (a) show 3/4, 2/3, 5/8; (b) compare 1/4 and 3/10, and 4/6 and 3/5; and (c) show 1/2 is the same as 2/4, 3/6 and 4/8, and 2/5 is the same as 4/10.

(5) Use three sets (joined together) of rectangles, strips or circles to: (a) show 1 1/2, 2 3/5, and 4 7/10; and (b) show 7/4 is the same as 1 3/4, and 2 1/6 is the same as 13/6.

One important activity to use with such fraction tasks (and with all mathematical tasks) is called 'reversing'. Instead of just taking a *whole* and dividing it into *parts*, reverse the tasks, and take a *part* to create a *whole*. An example is giving students a piece of paper and telling them to name this as $^{3}/_{7}$. Then ask them to create the whole of which this $^{3}/_{7}$ is a part. The task if for students to see that their original piece of paper represented 3 parts of the whole. If they took another piece of paper of the same size, they would have 3 more parts of the whole, or $^{6}/_{7}$. They then need to take another sheet of paper, divide it into 3 equal parts, and join it to their six-sevenths representation. Typically, teaching focuses on whole-to-part activities. Experiences which reverse, and go part-to-whole are ways of providing rich learning experiences for concept development and consolidation.

Sets of discrete objects (e.g., counters, blocks, bottle-top collections) can be used to provide experiences for concept development of part-of-a-group. Since the 'whole' is now a group, students need to enclose the whole, for example by placing their hands over the whole, or by placing the whole on a sheet of paper, or within a string boundary, and always vocalising that "This is one whole". Fraction tasks with the set model need also to be *reversed*.

Paper models (from Activity 2) can be manipulated to develop understanding of fractions-as-division. The concept of fraction as division means recognising that in a symbolic fraction the numerator is divided by the denominator, for example that $^{3}/_{4}$ is 3 divided by 4.

ACTIVITY THREE:
Materials - paper circles; paper rectangles; scissors; glue; counters or unifix.
Directions -

(1) Take three paper circles, and divide them amongst four people so that each person receives the same amount of paper - "What fraction of one whole circle did each person get?", "What does this mean for this fraction - what is it related to?". Take 7 circles and divide them amongst three people so that each person receives the same amount of paper - "What fraction to each person?".
(2) Take a paper rectangle, call it "one whole" and divide it and cut it to make 3/4. Take a paper rectangle, call it "three-quarters" and use other paper, glue and scissors to make one whole for which it is 3/4. Take a paper rectangle, call it "two thirds" and use scissors and glue to make one-and-a-half.
(3) Take 12 counters, call them "one whole", and make three-quarters - "How many counters in 3/4?". Take 15 counters, call this "three-fifths" and make one whole for which these 15 counters are 3/5 - "How many counters in the whole?".
(4) Take 20 counters, call it "one-and-two-thirds" and make 3/4 - "How many counters in 3/4?". Use the answer to solve this problem: A farmer bought a small farm. To do this he borrowed 3/4 of the buying price interest free from his father-in-law. Two years later, he sold the farm for 2/3 more than he paid for it. The selling price was $200 000. How much did he have to repay his father-in-law?

Another problem with the language of fractions is that fraction names do not follow a consistent language. When we divide a whole into *seven* equal parts, we call the parts *sevenths*, and when we divide a whole into *eight* equal parts we have *eighths*. There is a language link between the number name and the fraction name. However, when we take one part out of a whole cut into *two* parts, following a consistent language pattern would suggest we have *twoths*, and that *three* parts give *threeths*. But we have *thirds*, and instead of *fourths*, we have *quarters*.

Another common difficulty with fractions is the interpretation of the symbolic fraction form. The symbol $^{1}/_{5}$ means a whole divided into 5 equal parts, and $^{1}/_{5}$ is one of those parts. Some students see the symbolic notation $^{1}/_{5}$ as one whole divided into sets of five; that fifths of a group are sets of five. Students have to come to understand that fractions are similar to division in that they follow inverse proportion. This means that the fractions $^{1}/_{3}$ and $^{1}/_{7}$ represent a whole divided into 3 and 7 parts respectively and that, therefore, $^{1}/_{3}$ as the whole divide amongst 3 is larger that $^{1}/_{7}$ which is the whole divide amongst 7.

These common difficulties have implications for teaching in structuring teaching/learning experiences. Learners must be able to easily move between fraction models, language and symbols. A teaching model (presented in Figure 6) commonly referred to as Rathmell's triangle after its creator, highlights the interaction between model, language and symbols for fractions. In Figure 6, the model shows there are six interactions for understanding the

BEST COPY AVAILABLE

fractions $^{1}/_{3}$. The model is a useful guide for developing learning experiences for any mathematical topic.

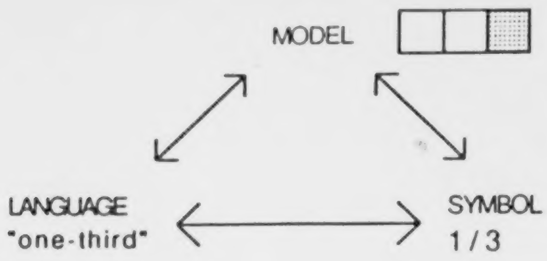


Figure 6: Rathmell triangle of interactions

Decimal-number numeration

There are three principles of whole-number and decimal-number numeration: (a) base (numbers are built around grouping and partitioning by tens); (b) position (the position of digits in relation to the ones position determines their place value); and (c) odometer (each place-value position counts similar to the ones position). To facilitate learners' understanding of the first two principles in whole numbers, a base oriented material (bundling sticks or MAB) is placed onto a position oriented material (a place value chart). A similar approach is used with decimals. The position material can remain as the place-value chart but new material is needed to show the value of the new fraction place-value positions.

A recommended material for decimal base is tenths and hundredths grids. These show base in that the size of the tenths is actually one-tenth of the size of the ones and the size of the hundredths is actually one-hundredth of the size of the ones. However, the grids and the place value charts do not integrate well as the grids can not be separated into tenths and hundredths and placed on their columns on the charts. This places great stress on the language used by teachers to bridge the gap between base materials and position materials and develop understanding of the decimal notation. As for whole numbers and fractions, the activities need to be built around the six interactions of the Rathmell triangle of Figure 6.

The teacher's role is to provide experiences so that students can see decimal numbers as an extension of whole numbers and fractions. The connection between decimal numbers and whole numbers is that both are based on the ones place, the bi-directional relationship between place-value positions, and the odometer principle. To use this connection, it is important that the focus on the decimal point is limited to identifying the ones place (i.e. to ensuring that learners understand that the decimal point has no position). This means that numbers should be written with no position for the point (e.g., written as 3 2.4 5 not 32.45). It is also important for learners to understand that multiplying by ten shifts decimal place values to the right the same way it moves whole-number place values (e.g., that multiplying hundredths by ten will give tenths as well as dividing tenths by ten will give hundredths). This means that time must be spent after introducing a new decimal place-value position, say thousandths, in reversing the procedure, that is, showing that a hundredth is ten thousandths.

ACTIVITY FOUR

Materials - Bundling sticks; tenths and hundredths grid paper and plastic overlays; place value chart with tens-ones-tenths; place value chart with ones-tenths-hundredths.

Directions -

(1) Fold the tenths in the tens-ones-tenths behind so that only the tens and ones are shown. Represent numbers between 1 and 99 on the chart with the bundling sticks. Show how multiplying by 10 changes 3 to 30 and dividing by 10 changes 50 to 5. Partition a bundling stick into 10 equal pieces - "Where should these pieces be placed?" [Turn tenths back to the front and place pieces in this column].

(2) Place three bundles of 10 sticks in the tens column, seven single sticks in the ones column and 4 pieces in the tenths column. Draw up a small tens-one-tenths place value chart. Ask "How many tens?" - place this number in tens place on the place value chart; ask "How many ones (after tens removed)?" - place this number in ones place; and ask "How many tenths (after tens and ones removed)?" - place this number in the tenths place. Ask how this number would be written if there was no chart? Use bundling sticks and pieces to represent: (a) 2 8.3; (b) 3 0.6; and (c) fourteen and 7 tenths.

(3) Shade 40 hundredths on the hundredths grid and copy this shading onto a tenths grid overlay - "How many tenths in 40 hundredths?". Shade 7 tenths on tenths grid and copy this shading onto a hundredths grid overlay - "How many hundredths in 7 tenths?".

(4) Shade 3 and 47 hundredths on hundredths grid paper. Draw up a small ones-tenths-hundredths place value chart. . Ask "How many ones?" - place this number in ones place on the place value chart; ask "How many tenths (after ones removed)?" - place this number in tenths place; and ask "How many hundredths (after ones and tenths removed)?" - place this number in the hundredths place. Ask how this number would be written if there was no chart? Use grids and charts to represent: (a) 3.5 9; (b) 6.1 7; (c) four, 7 tenths and 2 hundredths; and (d) eight and 3 hundredths.

(5) Play Win 5 ones. Starting with 3.78 on hundredths grid, take turns in rolling a die (each number represents a number of hundredths) and adding that number of hundredths to your current number; record your numbers as you go. One person is to act as the teacher, asking questions such as - "Do you have enough hundredths to trade for a ten?", "Do you have enough tenths to trade for a one", "What number do you have now?". Play Lose a one. Start with 3.25; take away the number of hundredths shown on the die. What teaching questions would you ask?

The connection between decimal numbers and fractions is in the decimal place-value positions. There is an important distinction here. Hundredths in decimals are different to hundredths in fractions. For instance, thirty-four hundredths for fractions is just a whole divided into 100 equal pieces of which 34 are chosen, whilst 34 hundredths for decimals is 3 tenths and 4 hundredths. This requires seeing 3 tenths as 30 hundredths, that is, seeing hundredths as tenths of tenths. Thus, hundredths have to be seen as part-of-a-part as well as part-of-a-whole.

The final important principal is that learners should experience the odometer process in decimal place-value positions (see Activity five). This will provide the ability to operate at different place-value positions and to determine what it is to be accurate to a particular place-value position (e.g., to the nearest hundredth).;

BEST COPY AVAILABLE

ACTIVITY FIVE
Materials - calculators; pen and paper.
Directions -
(1) Reading and writing numbers. Enter these numbers on the calculator: (a) 43 and 367 thousandths; (b) 3 and 2 hundredths; and (c) 17 and 15 thousandths - "Read back the buttons you pressed!". Press these buttons: (a) 256.321; (b) 40.04; and (c) 54.019 - "Read back the numbers!".
(2) Decimal wipeout. One person calls out a number, say 4 3.5 7 8, and a digit, say 7. Everyone else has to enter the number, thn wipe the 7 back to zero with a single subtraction (here that would be -0.0 7). The another calls a number and so on.
(3) Odometer. Enter 3.4 5 6 on the calculator and press + 0.0 1. Press equals and state digit in hundredths position. Repeat this until reach 3.4 9 6 - "What will happen if press = again?". Keep pressing = and note pattern 7, 8, 9, 0, 1, 2, and so on. Repeat this process for subtraction (e.g., enter 5 4. 6 2 and - 0.1 and press = continuously).

Implications for teaching adults

Baturo and Cooper (1995) identified three teaching methods which appear to have potential for facilitating school students' understanding of mathematics. The first of these, which was discussed at the beginning of this paper, is actively *modelling* mathematics ideas with materials, pictures and language. This method requires the mathematics to be analysed to identify the central issue so that material use is kept to a minimum and does not obstruct final mental understanding. The method also requires the material to be analysed so that any weaknesses can be covered by appropriate language. If care is not taken here, the material can actually encourage misconceptions. The second method, also discussed earlier in this paper, is the technique of *reversing* to ensure all directions are covered, for example, part-to-whole and whole-to-part and language to model and model to language. This requires diligent attention by the teacher to the form of their interactions with learners to ensure that all directions are given adequate time. The third method is to use a *cycle of instruction* to ensure that teaching covers all components necessary for understanding, namely, informal ideas with materials and natural language, formal notation and language, connections to prior knowledge, familiarity with procedures, and proficiency with problems. This method provides a particularly fruitful framework for planning teaching.

Adult learners are different to students in two aspects: (a) they have been taught the topic earlier and have misconceptions; and (b) they will not use materials they feel are childish. This means that care should be taken in translating the school methods to adults, but it does not mean that the methods lack validity. However, new materials and new approaches with these materials may have to be developed. For instance, sets of material composed of counters for a dollars, small pieces of paper for $10 notes and larger pieces of paper for $100 notes can replace the wooden flats, longs and units of MAB. As well, dollar notes and 10 cent coins may assist ones and tenths, while metre rulers broken into centimetres can assist ones, tenths and hundredths. Less concrete materials such as calculators and number expanders appear to still

BEST COPY AVAILABLE

work well with adults, while some of the games are effective at any age. Hence, this paper concludes with Activity 6 which focuses on games and calculators.

ACTIVITY SIX:
Materials - calculators; pen and paper.
Directions -

(1) Decimal dice order. Make up five rows as follows

[ ] . [ ] [ ] less than [ ] . [ ] [ ]

Throw a die six times. At each throw of the die, players put a number in one of the boxes. At the end of the six throws the left hand number must be less than the right hand number. If this is so, the player scores the digit in the left hand box. If this is not so, the player scores zero. After five plays, the player with the highest score wins. As a variation, make up rows like below and throw the die 4 times. As well, can draw cards from a deck.

2 . [ ] [ ] less than 2 . [ ] [ ]

(2) The Big One. One person thinks of a number between 9 and 100, presses this number, the division sign, the number again and equals. This give a calculator read-out of 1. The calculator is passed to another player who has not seen the number entered. This player presses a number (a guess) followed by equals - no clear or division sign can be pressed. The read-out on the calculator helps the second player make a better second guess. When the guess is correct, the calculator shows 1. The second player scores the number of guesses made. The players reverse roles. The player with lowest total score after a set number of plays wins.

(3) Target. Someone sets a starting number and a target number. The players enter the starting number and press the multiplication sign and the equals sign. Then, they try to guess the number which multiplied by the starting number will give as close to the target as required. At each guess, the players press their guess followed by equals. They use the number displayed to make a better guess. A starting number of 17 and a target of being within 0.1 of 500 will utilise a lot of decimal knowledge.

References

Australian Council of Education. (1992). *A national statement on mathematics for Australian schools*. Canberra, ACT, Australia: Australian Government printing Service.

Baturo, A. R., & Cooper, T. J. (1995, July). Teaching decimal fractions: Implications from research. In A. Richards (Ed.), *FLAIR: Proceedings of the 15th Biennial Conference of the Australian Association of Mathematics Teachers*. Darwin, NT: Australian Association of Mathematics Teachers/Northern Territory University.

Kaplan, R. G., Yamamoto, T, & Ginsburg, H.P. (1989). Teaching mathematical concepts. In L. B. Resnick and L. E. Klopfer (Eds.), *Toward the thinking curriculum: Current cognitive research (1989 Yearbook of the Association for Supervision and Curriculum Development)*. Reston, VA: Association for Supervision and Curriculum Development

Resnick, L. B., Nesher, P., Leonard, F., Magone, M., Omanson, S., & Peled, I. (1989). Conceptual bases of arithmetic errors: The case for decimal fractions. *Journal for Research in Mathematics Education, 20*(1), 8-27.

BEST COPY AVAILABLE

Computing as literacy - the computing practices of language and literacy teachers

Chris Corbell

Introduction

The National Centre for English Language Teaching and Research (NCELTR) has responsibility for providing assistance in professional development to state and territory level providers of the Commonwealth Department of Immigration and Ethnic Affairs' Adult Migrant English Program (AMEP). The AMEP is the largest government-funded adult English language teaching program in the world. It is federally funded and coordinated by the Department of Immigration and Ethnic Affairs (DIMA). In 1995 there were some 64,261 enrolments at more than 250 language teaching venues around the country, run by state Adult Migrant Education Services, TAFE colleges and independent providers.

With an awareness of increasing demands for computer use among teachers in the AMEP, NCELTR needed an accurate picture of the demands on teachers for computer use, and how the training to meet these demands was being carried out. The present project was set up to gather and present this information. It surveyed 188 teachers around Australia using a formal questionnaire and focus groups. Full detaislc an be found in Corbel (1996).

The project goals were to

- describe the current computing practices of teachers in the AMEP
- identify needs for new skills and practices
- plan training to meet the needs

in the areas of current and emerging computing practices of language and literacy staff in the AMEP.

The outcomes were to be

- a statement of educational computing competencies,
- an indication of competency levels among AMEP staff
- specifications for training to meet needs.

The first section of this paper introduces the "literacy perspective" adopted by the project. The next section addresses the first two project outcomes - a statement of educational computing competencies, and the levels of competency of AMEP staff. The final section addresses the training issues.

Computing as literacy

The project approached educational computing as a social issue as well as a technical or a technological issue. Reflecting a literacy perspective, it sees the focus of educational computing not on the computer, but on the texts that are mediated by the computer, and at the practices surrounding those texts. This reflects an emerging shift away from "the notion of literacy as a set of skills with identifiable consequences" towards the view "that literacy can only be understood in the context of the social practices in which it is acquired and used." (Barton 1994:24). As Scribner and Cole put it: "Instead of focusing exclusively on the technology of a writing system and its reputed consequences...we approach literacy as a set of socially organised practices which make use of a symbol system and a technology for producing and disseminating it." (Quoted in Barton 1994:24-5).

This project was concerned with teachers' socially organised practices and thus it looks at teachers' educational computing practices as literacy practices. Seeing literacy as social practice shows the significance of the people, the settings, and the relationships, as well as the hardware and software involved, in the development of teachers' ability to work with print texts as well as computer-mediated texts. This view goes beyond a simple description of what happens, however. As Baynham puts it: "Investigating literacy as practice involves investigating literacy as 'concrete human activity', not just what people do with literacy, but also what they make of what they do, the values they place on it and the ideologies that surround it." (1995:1)

Educational computing competencies and competency levels among AMEP staff

Most people in the language and literacy field are well aware of the issues involved in defining competencies. An essential issue is one of detail - how broadly or narrowly are competencies to be described. Are they to be of the generic Mayer Key Competency type, or are they to be at the level of detail of industry competencies? Inevitably in educational computing the competencies fall somewhere in between, since neither the broad nor the detailed competencies have been developed in detail. We will consider the results of the survey in the context of two perspectives on competency, one state and one national.

AMES Victoria Competencies

AMES Victoria has developed a broad three-tiered set of competencies for each of six "key curriculum areas", one of which is educational computing (Howell and Corbel 1996). The first level describes the skills and knowledge all teachers should have. The second level describes the skills and knowledge that specialist teachers at centres should have. The third level describes the skills and knowledge necessary for teachers whose work takes them between centres and into external arenas. In educational computing certain tasks and related computing features have been identified and these formed the basis of training in 1993/4. Thus in Victoria these "competencies" have emerged from teachers' practice and at the same time have shaped it.

More than half the respondents were at the highest of the three levels. While this is a positive finding, we must remember there are two more types of training necessary - that for those below that level, and that for those who are there. Where do they go next? As we shall see in the next section, there are levels other than those addressed by the AMES Victoria approach. In addition, the demands at each level keep rising.

Information Competence (NBEET)

In November 1995 the Employment and Skills Formation Council, on behalf of the National Board of Employment Education and Training, published a significant report on the training and education issues associated with the convergence of technologies in the communications and computer industries (DEET 1995). The report focuses on the skills and attributes required by the workforce as a result of the growth in converging technologies. Its treatment of competencies is of particular relevance for this survey.

Competency levels

The Council offers five functions of computer use - basic, enhanced, knowledge, innovative, creative - which correspond roughly to increasing levels of complexity.

Although the survey question did not match the Council's categories exactly, it is probably safe to say that it covers the content of the first two, basic tool and enhanced tool. 73% of respondents were in this category, with 56% of respondents were at the top end of it.

The Council's Recommendation 14 is that:

"An objective be adopted to train all staff in Australia's education and training institutions to the level of enhanced tool skills user, to train more than 50% to the knowledge tool skill cluster and to train more than 3% to the innovative/creative tool skills cluster by the year 2000."

The AMEP is well on the way to achieving the first part of this objective. It is likely, had the survey included specialist staff in areas such as materials development, that the third part would nearly be reached. In the second part the AMEP is behind, but with 35% of respondents having a modem, many AMEP teachers are clearly ready for this next step.

Until now the main focus has been on general computer skills. Training in skills necessary for utilising converging technologies has yet to be undertaken, though the NCELTR Short Course Online Literacy for Language and Literacy Teachers in November 1995 marked a start in identifying and developing the skills necessary. A follow-up project in 1996 is developing self-study material based on the course content (Corbel forthcoming).

Access for disadvantaged groups

The Council is concerned that all groups within the community need guaranteed access to the new technologies. The needs are of three types - access to equipment, access to networks, and "increased computer and communication literacy skills and for training in the use of general computer skills (eg word processing, spreadsheets) and in communications technologies (eg accessing the Internet)". The Council recommends:

"Develop information materials to raise the awareness of people from non-English-speaking backgrounds of the need to update their skills in the converging technologies and to develop measures of assistance where they are urgently needed to meet this need." (67). AMES Victoria is undertaking a substantial survey of the computing needs of members of various ethnic communities to gather more information about this issue (Corbel forthcoming)

Teachers' attitudes

The Council asks "some fundamental questions" about relevant learning theories, the quality of technology, teachers' attitudes, learners' attitudes, and the responses of employing authorities.

In the case of teachers the Council is positive:

"The Councils work shows that some teachers in schools, TAFE colleges, and universities have embarked, as individuals and in small groups, on quite substantial integration of the technologies. These examples are characterised by strong leadership but they represent only a small fraction of the teaching force."

In this survey we found evidence of a limited degree of integration being undertaken by a much larger proportion of the teaching force. It is a characteristic of many AMEP providers that such innovations are not "hot housed" with high-end applications in a few locations, but are more widespread, albeit at a lower level of sophistication. The Council continues:

"If teachers and trainers are given proper opportunity to develop along with the technology, awareness, confidence and finally competence will develop. It was often pointed out during consultations that Australia has an ageing education workforce in all three sectors. To some extent this may be a constraint. Yet those in the current workforce possess a vast wealth of experience, knowledge, skills and attributes. They may also have the time to learn, given the right motivation and opportunity. In any case, their experience should be treated as invaluable for the production of multimedia education content. It is very much a matter of producers having the desire and competence to "listen" and to use this accumulated experience in new multimedia projects."(1995:82)

This survey provides support for this argument, showing that although the AMEP workforce is ageing, in keeping with general trends, it is still capable of learning and change. We will return to the issues of time and opportunity below.

Meeting needs

In this section we come to the third of the project outcomes - the specification of training needs. If there is one theme common to the research on educational computing, as well as the findings of this survey, it is the significant of training. As Standish puts it, summarising the recommendations of earlier reports:

"The first condition is training. Teachers are the key to educational change, and they need to see how computers can be of personal use to them. Second teachers need a vision of technology and education. They must have time, expertise, resources and structure to re-evaluate learning with a focus on using technology. Next, innovation should be encouraged by administration and colleagues. Lastly time and resources are needed by providing release time for teachers to attend classes and learn. Teachers need access to technology during and after training to be able to practise and use what they have learned (1993:7)"

The issue of training will be dealt with in more detail below. We first turn to the other issues raised by Standish.

Vision

The impression gained from this survey is that there is a vision held by many people in the AMEP, but that most of them are teachers. A substantial number of respondents were critical of the lack of perspective, policy and priority on the part of management. At the central office level, program, finance and administration staff need to understand the central role of educational computing in the provision of language and literacy training. The attention of many in central offices has been directed towards mainframe administrative computing. The AMEP has made a huge commitment to this area over the past decade, with the result that educational computing has been a much lower priority. Educational computing has to be seen as something equally important to administrative computing, but different enough to warrant specific policy and funding. 37% of respondents knew there was a policy on educational computing in their organisation. Perhaps each provider does have a policy, but if it does, in many cases it is not being sold to the staff. The figure should be much closer to 100%

In addition to policy comes priority. A policy is all very well, but if it does not receive active attention, it might as well not exist. Only 22% said that their organisation had an implementation plan. Maybe there are plans, but, again, they are not being sold to those most affected by them. For there to be priority, there must be understanding and vision. This must exist at the very top of the administration.

Encouragement

The role of middle level management, particularly principals of centres, is significant in providing encouragement. At this level there seems to be more awareness among staff of policy and planning, with 54% of respondents saying that there was a policy at their workplace, and 33% saying that there was an implementation plan. Although only 8 respondents nominated the principal as a direct source of encouragement, it is likely that indirectly principals were more influential. Principals can set the tone of centres with their attitudes and interests in certain areas at the expense of others. Particularly in the absence of central direction, the value the principal places on educational computing, and how that translates into time allowances in particular, is crucial to the success of an innovation.

"The range of support they (principals) offered was influenced by the value placed on the CSWE. Support ranged from the provision of resource support, especially in terms of time release for experienced teachers to support colleagues, to the setting up of organisational structures such as the stage meetings to help teachers work through the meaning of the change together. (Bottomley, Dalton and Corbel 1994:48). Such support would be valuable for educational computing as well.

Principals have to have the vision to provide the encouragement. Because the introduction of educational computing has been relatively informal there is more need for central management to ensure the vision is shared and the encouragement provided. Vision has to be tempered with a sense of the reality of teachers' lives, however. Encouragement must be manifested in less direct, but equally fundamental ways to do with access, time, finance and resources and training.

Access

There is perhaps more concern for student-computer ratios than for teacher-computer ratios. AMES Victoria has funded a certain ratio, the Skills Formation Council recommends another one in its report. The problem is how to work out a teacher-computer ratio. Numbers of computers divided by number of teachers is highly misleading, since it ignores such issues as location, timetabling, shared usage, portability, compatibility, and so on. A fundamental problem is that personal computing is supposed to be just that - personal! - and for most teachers it isn't.

There is a need to acknowledge the large amount of time spent at home on educational computing by some teachers. This could be supported through lending notebooks, or supplementing software purchases for home use. At the same time the concerns of the NSW focus group, that there is an automatic assumption that this work will be done at home, should be acknowledged.

Time

More time was the commonest single suggestion in the survey. The National Board of Employment Education and Training (1995) found that "the issue of time to learn was a very big one indeed" (89). Respondents made a number of suggestions as to how this could be achieved, the most common being more money for replacement and less teaching. Other suggested a willingness to find time provided the need was acknowledged, and educational computing be prioritised over other increasingly demanding tasks. (Ironically, these tasks are often related to the documentation of competency based courses. There was virtually no mention of educational computing assisting in this area. It may be that this is conflated in users' minds with the demands of administrative computing.). Hargreaves (1994) summarises the situation that emerges from the conflict between two different perspectives on time - the monochronic administrative perspective which calls for more control and accountability for time, and the polychronic teacher perspective which balances the multiplicity of classroom demands:

> "The solution to this impasse is not to be found in appeals to more sensitivity and awareness among administrators as they devise and develop new programs and timelines for change. The time-related misunderstandings between administrators and teachers are endemic to the distance there is between their two lifeworlds - a distance which appears to be increasing. It would seem more fruitful to explore solutions which question the strength of the divisions between administration and teaching, between development and implementation and which question the bureaucratic impulses that support such divisions. In particular, it may be more helpful to give more responsibility and flexibility to teachers in the management and allocation of their time, and to offer them more control over what is to be developed within that time." (1994:114)

The time for teachers to develop educational computing competence needs to be maximised through an acknowledgment of the ever greater demands on teachers' time from a range of sources, and to allow teachers a greater degree of control over how they use their time in meeting these demands.

Resources

Unlike other forms of innovation educational computing calls for a substantial investment in equipment, which in a relatively short time needs upgrading, particularly if newer equipment is installed. It has to be acknowledged that the widespread use of text-based CALL may largely be due to the simplicity of the programs used and their capacity to run on just about any computer. It may be that learner expectations will call for more graphically-oriented and less text-based material. Interestingly, only a handful of respondents asked for greater multimedia capacity, though the requests for greater interactivity could be interpreted in this way.

Converging Technology, Work and Learning (National Board of Employment Education and Training 1995) focuses very strongly on multimedia. We need to reflect on the relative lack of uptake of the only two AMEP- supported multimedia ventures, and establish an equipment policy that acknowledges the perceived demand for multimedia, yet the reality that a text based-approach may be quite suitable for learning aspects of language subsystems.

The major issue is networking. There is less immediate appeal in going online as a language learning experience for ESL learners that there is, for example, for LOTE learners. However, online literacy (or higher levels of information competence) are going to become what word processing is now - a set of standard skills that everyone in the workplace is expected to have. For this to happen, AMEP teachers and learners will need access to networks to both learn the skills and to teach them. The implications of the above are that formal budget lines for educational computing have to be established with identified percentages for hardware, software and training.

Training

There are two broad directions that training must take

- towards greater systemisation and formality

- towards readiness to hand/just in time

Formal training

The content of training needs to be based on a common set of skills/competencies derived from an analysis of the tasks currently carried out by teachers and likely to be carried out by them in the future. What do teachers and other staff do now, and what will they need to do in the future, with computer-mediated texts? How does this vary between generalists and specialist staff, and between levels of the organisation?

Some guidance for this already exists in the materials developed by AMES Victoria . These may form the basis of a set of competencies that would have applicability across the AMEP. Development of such competencies needs to bear in mind the categories and skills clusters of the NBEET report, as well as other work that may be under way.

The training needs to have a more extended range. While the three broad levels of competency of the AMES Victoria program cover current practice, the only cover the first two levels of the NBEET skills cluster. There is a need to develop descriptions of tasks at higher levels. Some guidance for this already exists in the materials developed for the NCELTR Short Course on Online Literacy, and in the results of the survey of participants reported on earlier.

The outcome of such an analysis would be identification of competencies organised according to levels, which would produce sets of modules in the standard Competency-Based Training form. This would allow for accreditation and improve accessibility. On the basis of the modules, teaching activities should be developed to provide a hands-on approach. The formality of the training will come through the development of modules, against which individuals can match their current competency levels, and subsequently through accreditation of the training. AMES Victoria is in the process of developing such a course.

Course based on the modules should run locally. Group sessions would be facilitated by a specialist staff member (the Educational Computing Teacher (ECT):see below). Central training will focus on management and the ECTs. Teachers will be able to study at home as online access to modules and staff will become available. A Modular competency-based approach allows for continuity, and variations in intensity and pacing according to individual and group needs.

Informal training

"Hands on with the trainer at the centre is the key" (Respondent).

Our computing practices perspective shows how a range of other people mediate teachers' computing - peers, colleagues, family, as well as designated specialists.

Survey respondents frequently called for one to one training. This reflects the special nature of educational computing, with its strong technical component. Perhaps more than any other innovation it calls for support that is ready to hand, or, in the language of management, just in time.

A typical response to this issue is to attempt to redefine the way the user interacts with the computer - to improve the Help screens, to simply the screen, and so on. Our perspective is to acknowledge the embeddedness of computing in social practice and to accept that teachers will ask colleagues and get useful advice. This is not to deny the importance of learning strategies for getting support from the computer - computer-based support is increasingly sophisticated and probably under-utilised. We need to strike a balance between interacting with the computer and with colleagues in carrying out tasks dealing with etexts. Too much reliance on colleagues is expensive and disruptive: too much reliance on the computer may be equally time-wasting.

In AMES Victoria support comes from a formally designated specialist, the Educational Computing Teacher (ECT). The ECT can support a local network of skilled teachers who are available for informal one to one support. A mentor system might be established between these teachers and less experienced ones. However, one to one work will be in the context of the training modules referred to above. Acceptance of the role of others in supporting computing practices means that their work must be acknowledged. Acknowledgment for the skills of knowledgeable teachers can come in various forms, not necessarily formal.

Conclusion

The National Board of Employment Education and Training 1995) recommends:

"By the middle of 1996, each school system and training sector to provide to the Ministerial Council a broad analysis of the current position in relation to technology infrastructure, workforce capability and the application of multimedia products." (Recommendation 10: Analyse Current Position). This survey meets that requirement, and shows AMEP teachers well on the way to the levels of competence required.

However, despite the successes, there is still much to be done. The computing practices of language and literacy teachers have until now focused on two main areas - the use of computers to teach language (CALL), and as a tool for both teacher and learner use. Teachers have had not only to learn how to use the computer to mediate texts, but have had to teach others as well. Now the convergence of tasks, roles and media is introducing a third area of educational computing. The demands of "information competence" or "online literacy" are increasingly being felt. As with

CALL and word processing now, teachers will have to both learn how to use and learn how to teach these new competencies/literacies. At the same time, there is a continually-developing multimedia capacity in all three areas - computer assisted (language) learning, computer as office tool, and now computer as networked communications medium - which ensures a continuing demand for learning in even familiar areas.

This survey suggests that teachers in the AMEP are well-positioned in skills and attitude to meet this challenge. With appropriate support in policy and budgeting terms, teachers will continue to demonstrate the skills of lifelong learning they are teaching to their students. Teachers have, or are gaining, the competence, but not all have the confidence to put it into practice. These skills need to be publicised in order to prevent the positioning of teachers as impediments to a technological solution. Work, learning and technology are converging into a way of living and learning that these teachers are already successfully undertaking.

Barton, D. (1994) Literacy. Oxford: Blackwell

Baynham, M. (1995) Literacy Practices. London: Longman

Bottomley Y., J. Dalton and C. Corbel (1994) From Proficiency to Competencies. Sydney: NCELTR

Corbel (forthcoming a) Online Literacy for Language and Literacy Teachers. Sydney: NCELTR

Corbel (forthcoming b) New Technology, Flexible Delivery and English Language Learning - the Information Competence of NESB clients. Melbourne: AMES

Corbel C. (1996) The Computing Practices of Language and Literacy Teachers. Sydney: NCELTR

Hargreaves, A (1994) Changing Teachers, Changing Times. London: Cassell.

Howell, C. and C. Corbel (1996) Key Curriculum Areas. Melbourne: AMES.

National Board of Employment Education and Training (1995) Converging Technology, Work and Learning. AGPS: Canberra

Standish, D. (1993) Ignite technology: Making the difference with staff development. Wilmington College.

Chickens, eggs and 'access':

Untangling competence and capability through a re-examination of skills, knowledge, values, non-formal and formal learning in agriculture

Ian Falk & Sue Kilpatrick

Abstract

What is access? What is non-formal learning? What is formal learning? What is the relationship between and importance of skills, knowledge and values in the process of gaining access to further education and learning?

Using the process of critical reflection about a research project-in-progress meeting where such questions are asked, this paper presents a view of what values, knowledge and skills are involved when agricultural workers access further education and learning. The nature of 'learning' is called up for re-examination, with processes involved in 'non-formal learning' and 'formal learning' identified. The most important affirmation from the discussion is that, in the 'skills, knowledge and values' model of learning, the sequence of each domain and items within the domains is a crucial factors in showing how non-formal learning and access relate to each other.

Which comes first: the skills, knowledge or values?

Considering the thorny problem of the conference theme: 'Competence equals capability?' allowed us to reflect upon the various ways in which we talk about learning these days. Perhaps the earliest model is provided by the behaviourist writers, where Bloom (1956), drawing together the team of people which included Tyler, framed three dimensions to educational activity in which they sought to identify the famous (and infamous in some circles) 'taxonomies of educational objectives'. There, Bloom outlines the three planned dimensions:

> Our original plans called for a complete taxonomy in three major parts - the cognitive, the affective, and the psychomotor domains. The cognitive domain...includes those objectives which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills.

> ...the affective domain....includes...changes in interest, attitudes, and values, and the development of appreciations and adequate adjustment.
>
> [In]...the manipulative or motor skill area...we find little done about it in secondary schools or colleges [so]...we do not believe the development of a classification of these objectives would be very useful at present. (pp. 7-8)

The latter comment is interesting in own right as a reflection of the school-based derivations of the whole Bloom-based competency agenda in present adult and vocational education contexts. Since that time, most writers and researchers have used this tripartite model in their work on learning to structure their textbooks (e.g., Eson, 1964) or further their models of learning (e.g., Bransford, 1979). Similarly, the vocational education and training (VET) sector adopted the Bloom structure to describe and plan learning outcomes and programmes (e.g., Donaldson & Scannell, 1986). The use of synonyms or close meanings for 'cognitive' and 'psychomotor' usually agree with each user. For example, there are few deviations from 'knowledge' as the best synonym for the cognitive domain, while 'skills' is uniformly used for 'psychomotor'. Synonymns used for the 'affective' domain are, commonly, 'attitudes', 'values' and 'feelings', while others (e.g., Bennett, 1976) argue for the addition of specific items such as 'aspirations'.

The more we think about it, the more it occurs to us that perhaps it is the term 'affective' which is the problem here, stemming as it does from meanings associated with human feelings. Now the Oxford Concise Dictionary bases one of its key definitions for 'affect' on psychology derivations: "(Psych) feelings, emotion or desire esp. as leading to action" (Sykes, 1982, p. 16). In this paper, we adopt the word 'value' to encapsulate the affective domain. We cannot find a more comprehensive or apt single term now that 'attitude' has taken on different meanings in teenage culture.

It is this widespread acceptance that somehow behaviour which is related to learning and education can be organised and explained by reference to the skills, knowledge and values model that led the researchers involved in this project to incorporate them into the methodology. In the data analysis, in order to ensure all aspects of access and barriers are considered, the researchers ask the question, "What do farmers have to be able to do (skills, psychomotor), know (knowledge, cognitive) and value (affective) in order to access quality assurance?".

In this paper, we present a progress report on an important stage we reached recently in the data collection and analysis for this project. The first step is to provide an outline of the project upon which the thoughts in this paper are based.

About the project

The project is concerned with the identification of integrated numeracy and literacy skills, and the incorporation of these into a set of recommendations for a learning package for access to more formalised training pathways in the beef industry. Through using the beef industry as a case study, it is intended that the project will provide an exemplar for other agricultural (and wider) industry groups nationally. It examines the processes, materials and texts used in Quality Assurance and in existing Quality Assurance self-paced training packages. It analyses the numeracy and literacy skills required to use these materials and match this data with existing data about the target population of farmers obtained from this and existing research. Following the identification of integrated numeracy and literacy skills, the changes required of farmers will be identified, and the various integral components of the learning process will be integrated into a set of recommendations for training pathways and packages.

So what is this paper about?

The discussion about research-in-progress in this paper stems from the researchers' concerns to maximise access to contemporary knowledge for agricultural workers, and to ensure that barriers to such access are systematically confronted and accounted for in education and training provisions. One by-product of the analyses undertaken to date is, we believe, to help untangle the question of competence and capability through a re-examination of skills, knowledge, values, formal and non-formal learning in agriculture (and by implication, other industry sectors). Hopefully, it will help all of us think more clearly about which came first: skills, knowledge or values.

A contemporary snapshot of the agricultural sector in Australia

Agriculture, like all sectors of industry, is operating in a climate of change. Change is occurring in international markets, in domestic markets, in government protection and in consumer requirements. Change brings with it a need to understand and manipulate new work knowledge and practices, all of which depend on task-oriented up-to-date literate and numerate skills. These skills may be unfamiliar to those such as farmers as they increasingly need to engage in formal and non-formal adult learning and training.

Farmers are coming into contact with (a) unfamiliar procedures and practices in their field, and (b) new sources of information and unfamiliar ways of presenting that information. As well, there are new forms of literate and numerate information appearing on an daily basis, including technological changes such as the internet and electronic mail. Change brings with it the need to adapt to the new forms of numeracy and literacy which are integrated in the work tasks.

Global markets require quality products. Consumers, retailers, wholesalers and food processing companies need assurance that products meet minimum quality standards, for example in terms of chemical residue and disease-free status. The public concern following the recent outbreak of mad cow disease in the United Kingdom emphasises the importance of being able to prove that products meet quality standards.

Quality Assurance procedures and practices, which have evolved at an international level, are essential to Australia's global positioning, yet the present capacity of farmers to understand the entire process and adapt their practices accordingly is not commensurate with the quality implementation scenario. This places even greater strain on individual literate and numerate resources to cope with existing and projected change.

Change in agricultural markets

The markets in which farmers sell their products are changing as world patterns of trade change in response to economic growth in export destinations. The National Farmers' Federation (1993) stresses the need for training and flexibility in order for the agricultural sector to remain internationally competitive. The National Farmers Federation state that:

> ...the skills required of farmers in the past in order to succeed in agriculture will in future need to be supplemented with additional skills in order to cope with the changes that have emerged over recent decades. (National Farmers Federation, 1993, 75).

The National Farmers Federation is fully supportive of the project as an avenue for identifying needs and better targeting training material and courses aimed at developing farmers' skills. Industries are becoming increasingly competitive and quality assurance programs and credentials are a key component in gaining a market edge and meeting customer requirements.

As well, the Tasmanian Farmers and Graziers Association (TFGA) state that:

> In view of the recognised literacy and numeracy inadequacies of the rural population it is vital that producers have the skills to cope with the requirement that the customer is demanding of them. (Personal correspondence, Michael Fletcher, TFGA, 1996)

The different and evolving literate and numerate skills required in order to be able to plan for and manage change form the central concern of this project.

Since most agricultural production is exported, farm businesses are directly exposed to global competitive pressures. The rural sector contributed 29% of Australia's merchandise exports in 1994-95 (Martin, 1996). It is therefore essential for both the agricultural sector and the Australian economy that Australia's farmers have an appropriate level of skills, including numeracy and literacy, which will enable them to be confident in dealing with changes such as Quality Assurance and marketing.

Marketing and Quality Assurance

An increasingly crucial aspect of farmers marketing their products internationally and domestically is and will be Quality Assurance. A recent survey of key stakeholders in agriculture identified training in marketing as a priority, along with management training (Kilpatrick, 1996). Farmers themselves identify response to risk by making appropriate marketing decisions as important for farm viability (Van Tassell & Keller, 1991).

The Commonwealth and state governments recognise the central role of Quality Assurance in agricultural marketing by funding a number of quality-related projects for Australian agribusiness. Commonwealth funding for Quality Assurance in agribusiness for the period 1994-95 to 1996-97 amounts to over $19 million (Tasmania Development and Resources, 1995). However, the uptake rate for such programs has been slow (Francis, 1995).

Integrated numeracy and literacy

In this project, we refer to individuals' numeracy and literacy skills to include their capacity to perform with ease the numeracy and literacy components which are a part of and integrated into the existing and expected work tasks with which they are confronted in their daily lives. The numeracy and literacy skills required are both at a basic level and those required for more complex numerate and literate tasks. The proposal therefore begins with the Australian Language and Literacy Policy (ALLP) definition of literacy:

> Literacy involves the integration of listening, speaking, reading, writing and critical thinking. It includes the cultural knowledge which enables a speaker, writer or reader to recognise and use language appropriate to different social situations. (DEET, 1991, p. 4)

Numeracy, according to the Queensland Literacy and Numeracy Strategy (1994):

> ...involves abilities which include interpreting, applying and communicating mathematical information in commonly encountered situations, to enable full, critical and effective participation in a wide range of life roles.

It should be noted in these definitions that the terms "social" and "life" are taken specifically to include work.

As stated earlier, this project is concerned with the identification of integrated numeracy and literacy skills, and the incorporation of these into a set of recommendations for a learning package for access to more formalised training pathways. Therefore, the project will pay heed also to the report of the 1993-1994 ALLP project, undertaken by the Foundation Studies Training Division Of The NSW TAFE Commission, titled *Integrating English Language, Literacy and Numeracy into Vocational Education and Training: A Framework.*

For the present purposes, this project will adopt the following meaning for integrated numeracy and literacy, an explanation which brings together the previous definitions in the specific context of vocational purposes:

> Numeracy, literacy and language are used for different purposes within a wide variety of differing situations. Vocational settings, or workplaces, form one such group of settings, but each setting contains different, context dependent numeracy, literacy and language competences. The vocational and workplace

> settings provide the social activities in which language, literacy and numeracy competences are embedded.
>
> The implication of this point for the project is that the term "integrated" numeracy, literacy and language processes and practices refers to the "embeddedness" of the numeracy, literacy and language competence. The nature of the embeddedness determines the nature of the "integration" of numeracy, literacy and language competences in that site, in that context, at that time, with those varying activities which are displayed or required there.

No work has been done under previous national Australian Language and Literacy Policy (ALLP) projects on the integrated numeracy, literacy and language competencies required in order for agricultural workers to access formal training related to Quality Assurance. This project then, brings together the most current work on integrated numeracy, literacy and language with leading-edge industry needs, for a group of identified workers lacking crucial skills, who are unable to access available training.

The discussion in this paper stems from these concerns. It makes explicit some crucial early considerations about access, the relationship between skills, knowledge and values, and non-formal and formal learning experienced in the project so far.

Literacy and numeracy in Quality Assurance in agriculture

A number of Quality Assurance programs have been established in agriculture, for example Cattlecare in the beef industry and Flockcare in the sheep industry. These programs are based on the ISO 9000 series of quality standards. Producers who participate in the Quality Assurance programs must be able to understand market requirements and be able to produce to those requirements. As well, meticulous and often complex record keeping is required of primary producers. Self-paced training programs are available for those seeking Quality Assurance accreditation. The processes on which Quality Assurance procedures are based include a wide range of numeracy and literacy skills. These skills are essential for active participation in Quality Assurance in agriculture, but they have not been made explicit.

Domestic meat processors have expressed a preference for livestock from "quality assured" properties, and will pay higher prices for quality animals. A target of approximately 80% of livestock from "quality assured" properties has been set. Quality Assurance involves procedures and record keeping practices relating to chemical handling, staff training, stock records, stock transaction records, livestock handling and transport, livestock chemical treatment and stock feed. These procedures require literate and numerate skills which will be unfamiliar to many producers.

The Australian Meat and Livestock Corporation believes that many producers are not able to access Quality Assurance programs because they lack the required numeracy and literacy skills.

Education and training in agriculture

Australian farmers have a lower level of education than the remainder of the workforce, and than their international competitors. Australian Bureau of Statistics (1994) reports that 23.6% of employees in the agriculture, forestry, fishing and hunting industry group had post-school qualifications compared to 47.8% of all Australian employees. Cameron and Chamala (1993) say that only 25% of the Australian farm workforce had school leaving, trade or higher qualifications in 1992, compared to 50% of the farm workforce in New Zealand and up to 90% in Europe. Chudleigh (1991) estimated that only 11.7% of new entrants to Australian agriculture per year have tertiary agricultural education, and only 4.7% have farm management training.

The trend for low participation is confirmed by statistics on off-the-job training, where 7.2% of employees took a training course in the agriculture, forestry, fishing and hunting industry group, compared to 11.8% of Australian employees overall (Australian Bureau of Statistics, 1994). Participation in formal education for the existing farm workforce is also low; only 3% of farm businesses had a member of the farm management team engaged in an accredited agricultural training program in 1993-94 (Kilpatrick, 1996).

It is expected that the ANTA commissioned project currently being conducted by Butler and Lawrence, titled, 'Vocational Education and Training in Rural and Remote Communities: Access and Equity Project' is likely to confirm Kilpatrick's results, and expand on these somewhat.

The low level of educational qualifications and low participation in education and training of the agricultural workforce suggest that the high level numeracy and literacy skills required for the complex procedures and practices of Quality Assurance are not widely present in the agricultural workforce.

There is a need for non-formal programs to equip producers with the skills necessary for accessing the self paced accredited training programs, and to provide a bridge into formal training programs, for example the farm chemical accreditation certificate, and marketing and farm business management courses offered by TAFE institutes. The content and skills to be taught in such a bridging program, and effective methods for delivery, need to be identified.

Quality Assurance, literacy, numeracy and effective training

The effectiveness of a training program depends on matching the characteristics of the learners and the material to be learnt. The program must also be delivered in a manner which suits the participants' learning styles. The program must also be matched with the purpose and expected outcomes. There is some existing research on the characteristics of farmers and their preferred delivery methods from previous and current ANTA funded projects (Kilpatrick, 1996 and Kilpatrick, in press), so the outcomes of this project will also develop and add to the body of knowledge about learning styles of the rural workforce.

Through using the beef industry as a case study, this project will provide an exemplar for other agricultural (and wider) product groups nationally. It will examine the processes, materials and texts used in Quality Assurance and in existing Quality Assurance self-paced training packages. It will analyse the numeracy and literacy skills required to access these materials and match this data with existing data about the target population of farmers obtained from previous research. Following the identification of integrated numeracy and literacy skills, the factors requiring farmers to change will be identified, and the various integral components of the learning process will be integrated into a set of recommendations for training pathways.

The story of the discussion about skills, knowledge and values in the beef industry

The research project is presently about halfway through. Most of the data has been collected, and preliminary analyses are being conducted to ensure that all data still to be collected will in fact allow the questions for the project to be answered fully.

A recent meeting of the two researchers and two research assistants (both of whom are also beef producers), attempted to ensure just these outcomes. The discussion included:

(a) the criteria for selecting the final group of farmers for national telephone interviewing,

(b) whether the Farm Chemical Accreditation (FCA) component of the QA procedures could be incorporated into the study in more detail,

(c) wondering why only one third of Tasmanian farmers had done FCA which is a crucial component of QA, despite FCA being available for over six years, and being promoted heavily to farmers over that time,

(d) listing the documents and texts associated with QA in the Beef industry which had to be analysed in order to ascertain what skills, knowledge and values were required to access them, and

(e) how to analyse the documents and texts associated with QA in the Beef industry.

What is access?

It was when the discussion reached the last two of these points that we found we had to pose the question, "What is meant by 'access'?". We referred to the existing research, as well as imagining what farmers would have to do (skills), know (knowledge) and value (values, attitudes, feelings) in order to access quality assurance in general terms. Then we could consider what specific barriers to access lay in the printed materials associated with QA in the beef industry - self-paced learning materials, training programmes, awareness days (orientation programmes) and the like.

So the question, "What is meant by 'access'?" became the first of the two crucial questions in this discussion. After a fulsome debate, we decided that the answer to that question was "Access has been achieved once the first [QA] audit has been completed successfully". An interesting point for further consideration is to test how this definition might be generaliseable to other areas of adult and vocational education where a more traditional view of access prevails.

Then we organised a brainstorming session around the question, "What do farmers have to be able to do (skills), know (knowledge) and value in order to access quality assurance?", and the result looked like this:

SKILLS (GLOBAL AREAS)	KNOWLEDGE	VALUES
• literacy	• knowing that QA exists	• value QA as important (only as a result of concern for $$$?)
• numeracy	• knowing about QA	• value top quality produce
• educational	• knowing about market forces, globalisation & change	• value change as the way to achieve goals
• agricultural/farming	• knowing about agriculture / farming (how to farm)	• recognise their own self-confidence to proceed
• book- & record keeping	• knowing enough about QA to know they can do it	• value learning (skills, knowledge) as important
• farm mapping	• know that risks exist	
• risk identification	• know how to identify risks	
• self-direction & management skills		

The result on the whiteboard seems unremarkable at first. We listed the columns in the sequence shown (skills first, knowledge then values) because that is the sequence we commonly used in our discussions and found in the literature. That there should be significance in the actual *sequence* in which people really engage in each of these categories of activities had not occurred to us. But it would come next, when we related these skills, knowledges and values to a discussion about priorities or stages of access to the skills, knowledge and values embodied in 'quality assurance'.

Chicken and egg

The second crucial question was asked when we wondered, "But what do farmers have to do/know/value *first*?" What sequence do these groups or items form when we attempt to discover what comes first? Being able *to do* any or all the skills listed is no guarantee that learning will be engaged in. Neither is *knowing* the importance of QA a sufficient condition for an engagement with further learning. It seems to us that it is the very last item in the last column which underpins the whole question of access, namely, that farmers have to first of all *value* learning (skills, knowledge) as important.

The more time spent reflecting on this question, the more clearly we realised that no engagement with formal learning (going to information sessions, doing a learning package) would occur unless farmers first valued the skills and knowledge associated with QA sufficiently to be prepared to engage in the next step - which is to find out more about QA and what is means for them.

Implications

What does 'access' really involve?

As a hypothetical exercise, we re-sequenced the chart above, and in consultation with one farmer, deleted heavily context-dependent items, and ordered the remainder of the items to reflect factors of crucial importance in accessing QA *before* entering even information days or other more formal awareness procedures. When the chart above is re-configured to reflect the sequence of values, knowledge and skills which form an 'access pathway', the significance of the discussion can be seen:

VALUES	KNOWLEDGE	SKILLS (GLOBAL AREAS)
1 value learning (skills, knowledge) as important	1 knowing that QA exists	1 skills of keeping in touch with matters beyond the farm gate
2 value change as the way to achieve goals: being prepared to accept direction from others	2 knowing about state, national and international issues, market forces, globalisation & change	2 communication / literacy skills, esp. talking, listening, observing and critically evaluating information
3 recognise their own self-confidence to proceed	3 knowledge about farming & of own enterprise	

So it can be posed as a hypothetical statement that the values, knowledge and skills which are crucial for people (farmers) to access further education (about QA) are reflected in both the sequence of the columns in the table above, as well as in the sequence of items within these columns.

Clearly the balance of the project will need to test this statement, refine and develop it as necessary, then ensure that any recommended awareness and learning programme takes account of these factors, both in its content and its mode of delivery.

What is 'learning'

While it is too early to make any projections about the nature of 'learning' itself for farmers in this study, it is certainly clear that our traditional notions of learning need to be revisited. It seems obvious that the values, knowledge and skills required to access more formal forms of learning and education are themselves forms of learning. Tentatively, we might call these forms of learning 'non-formal' for the sake of argument.

Perhaps the clearest question to arise about this non-formal learning stage so far is that, as educators, we must tackle the thorny problem of 'teaching values'. The outcomes of this project will need to tackle the problem head on if it is to be true to its aims. What is also clear is that learning new values is the same process as becoming encultured into a new set of values, and there is an established body of research literature on the nature of learning as acquiring the values of a new 'culture'. In the most significant ways possible, learning is the process of recognising that new values are valuable for oneself, of recognising the value of assuming those values for one's own benefit, and of being able to master the linguistic and numeric features of those new value-systems in order to function within them.

QA for beef farmers presents a range of elements which are different forms of valuing, knowing and doing. In this sense, non-formal learning is very much a process of moving from one set of cultural values to another.

Conclusion

No firm conclusions are possible at this stage of the project. In this paper, the role of reflection and brainstorming as a project unfolds is seen to be crucial in forming perceptions, in shaping expectations, in data collection (and analysis), and in guiding the directions in which to look for implications and conclusions of importance both for the industry and for further research.

What does seem significant is that the term 'access' is often used glibly, and as if all we need to do is provide formal and non-formal exposure to skills, knowledge and values acquisition. It is clear that 'non-formal learning' in value-formation *before* any 'formal learning' occurs is crucial to ensure later access to more formal kinds of education and training. It is also apparent that certain knowledges - 'knowledge that' and 'knowledge how' - form a group of necessary pre-requisites for further learning opportunities to be accessed.

Perhaps most importantly of all, the reflections demonstrate the gross assumptions many of us have tended to make about the importance of 'formal learning', since it is suggested here that the most important part of learning occurs before the 'formal' stage in non-formal yet identifiable and categorical ways.

Perhaps the greater significance of this project will lie in the work it produces about non-formal learning where the pre-conditions for formal learning are established.

References

National Staff Development Committee (1993) *National Collaborative Adult English Language and Literacy Strategy*. NSW: Adult Literacy Information Office.

Australian Bureau of Statistics (1994) *Employer Training Expenditure, Australia July-September 1993*, Cat. No. 6353.0, Australian Government Publishing Service, Canberra.

Bennett, C. (1976). *Analyzing Impacts of Extension Programs.* US: Department Of Agriculture.

Bloom, B. (Ed.). (1956). *Taxonomy of Educational Objectives, Book 1, Cognitive Domain.* UK: Longman.

Bransford, J. (1979). *Human Cognition: Learning, Understanding and Remembering.* US: Wadsworth.

Cameron, D. and Chamala, S. (1993) Farmers and Formal Education. Will it Help them Stay on the Farm? In *Australia Pacific Extension Conference Proceedings* Surfers Paradise October 12-14. Queensland Department of Primary Industries. Brisbane. 329-335.

Chudleigh, J. (1991). Future Farm Management Education in Australia. *Proceedings 8th International Farm Management Congress*, International Farm Management Association, 84-93.

Cumming, J., Falk, I. & Freebody, P. (1994) *An Investigation of Literacy Achievement over a Year in a Range of Adult Literacy Settings.* DEET: Canberra.

DEET (1991) *Australia's Language: The Australian Language and Literacy Policy* . AGPS, Canberra.

Donaldson, L. & Scannell, E. (1986). *Human Resource Development: The New Trainer's Guide*. US: Addison-Wesley.

Eson, M. (1964). *Psychological Foundations of Education.* US: Holt, Rinehart & Winston Inc.

Falk, I. (1995) *Comparison and Evaluation of Adult Literacy Assessment Practices.* DEET: Canberra.

Francis, P. (1995) Cattlecare Faces Critical Times. *Australian Farm Journal*. November, 28.

Freebody, P., Cumming, J. and Falk, I. (1993). *A Trialing and Evaluation of the Adult Literacy and Numeracy (ALAN) Scales.* DEET: Canberra.

Kilpatrick, S. (in press) Effectiveness of delivery methodologies for education and training to rural Australia.

Kilpatrick, S. (1996) *Rural Training Programs: Effectiveness and Profitability. Final Report.* University of Tasmania, Launceston.

Martin, P. (1996) The Structure and Performance of Australian Agriculture. Paper delivered at the 22nd National Conference of the Australian Farm Management Society, Launceston 20-22 March.

National Board of Employment, Education and Training (1994) *Cultivating the Human Factor: Employment and Skills in Australia's Rural Industries.* AGPS, Canberra.

National Farmers' Federation (1993) *New Horizons: A Strategy for Australia's Agrifood Industries*. National Farmers' Federation, Canberra.

Sykes, J. B. (Ed.). (1982). *Concise Oxford Dictionary, Seventh Edition*. Cambridge: Clarendon Press.

TAFETEQ (1994). Queensland Numeracy and Literacy Strategy. DEVETIR: Queensland.

Tasmania Development and Resources (1995) Commonwealth and State Programs: Initiatives on Quality Assurance. Marketing and Business Service, Agribusiness Division. Unpublished paper.

Van Tassell, L. and Keller, L. (1991) Farmers' Decision-Making: Perceptions of the Importance, Uncertainty, and Controllability of Selected Factors. *Agribusiness*. 7, 6, 523-535.

Challenges facing training

William Hall

Introduction

Billions of dollars are spent each year on vocational education and training. Is that money being well spent? I doubt it, because vocational education is mostly locked into traditional ways of training, coupled with a straight jacket approach to curricula that is supposed to be 'standards' based. Such an approach has little to offer adult literacy.

Our system of training is mostly (either literally or metaphorically) 'bricks and mortar' based, with a heavy emphasis on the production of printed materials. This leads to inflexibility and a kind of permanency that is no longer relevant to the country's future needs. The attraction of the present, autocratically imposed, approach is its conceptual simplicity and its ease of tight bureaucratic control.

There are three main challenges for trainers:

- challenge of industrial changes and their impact on society
- challenge of communication changes and their impact on society
- coping with the inappropriate market metaphor.

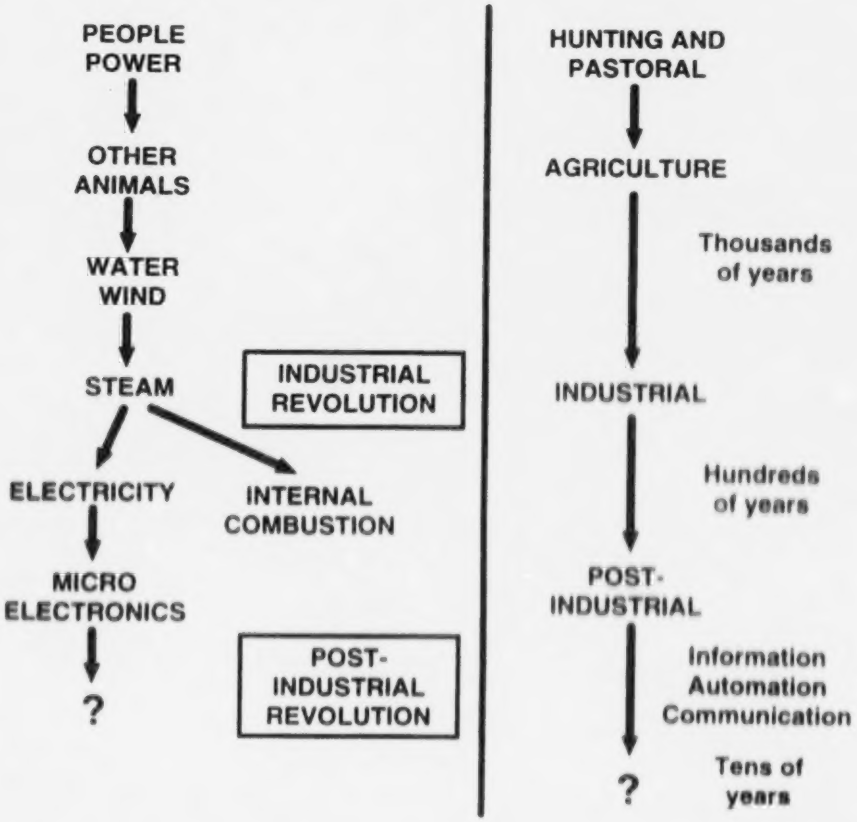
A possible way of dealing with these challenges is to plan strategically, building on Australia's unique combination of strengths, instead of just copying others.

Challenge of industrial changes

Humankind has lived through six industrial revolutions, moving from being a hunting and pastoral society to a post-industrial information/automation/communication society. Most generations have never experienced a single revolution; we are living through one right now. Most importantly, most people alive today will live through one, and maybe two, more revolutions. This rate of change is quite unprecedented.

The truism that 'the only stable thing is change' trips off the tongue, with no great understanding of the turmoil that will be caused when two more revolutions take place in the next 20–30 years. Our training structures must accommodate such rapid and extensive changes—presently they do not. They are designed for stability: the laughable 'solution' is the 'market' approach with its emphasis on competition. However, the approach we need to deal with these present and anticipated revolutionary changes is *co-operation*.

What are likely to be the next revolutions? I'll make two guesses: first, new materials; second, energy transfer.



Challenge of communication changes

Alongside the industrial revolutions have been the changes in communication. I do not believe that training managers have yet grasped the implications of (for example) multimedia, the CD, and the internet.

The internet is being used as a facile notice board or cheap post-box. Amazingly, printed books are actually being placed on the internet, which is a bit like sitting in front of a television set with the news being presented in visual morse code!

Used appropriately, multi-media challenges the need for 'bricks and mortar', removes the distinction between 'on-the-job' and 'off-the-job' training, and turns trainers into information retrieval specialists.

Interestingly, some one-to-one and small group training (apprenticeships!) will still be needed. Personal interaction skills will need to be taught with greater urgency, bearing in mind that personal interactions have dropped 50 per cent in people's lives over the past 30 years. Adult literacy has important roles in all of this.

COMMUNICATION

ORAL	
TM	
PICTOGRAM	
TM	
WRITING	5000 years ago
TM	
PRINTING	550 years ago
TM	
(PRINTING PRESS)	Steam engine
TM	
COMPUTER MEMORY	50 years ago

All of this gives new meaning to 'adult literacy', including the definition of literacy itself. Electronic digital delivery demands totally different ways of collecting, classifying, storing, disseminating and using information. The training challenges are enormous.

The market metaphor

If the definition of 'market' is restricted to 'giving clients what they need', then I have no quarrel with the term. However, it is taken to mean far more than this within the training context. Competition has become an end in itself, not just a means to an end. Anyone who challenges competition is regarded as a fool.

The (so-called, and I would claim spurious) 'market' is changing us from a low practical skill/low theoretical knowledge country to a high practical skill/low theoretical country. We are moving from D to B in the matrix.

		THEORETICAL KNOWLEDGE	
		HIGH	LOW
PRACTICAL SKILLS	HIGH	A	B
	LOW	C	D

What we desperately need is to move from element D of the matrix to element A, not to B. (The matrix is based on an OECD paper.)

We will only succeed in using the industrial and communication revolutions to our advantage if we are in element A, and to do this we must plan strategically.

Alas, about 20 years of close contact with senior managers in industry and business, and with senior bureaucrats, has shown me that their goals are depressingly short-term and their view of training is narrow in focus. Also, their approach to management is bottom-line directed—which is the major complaint I have of the market metaphor being applied to training.

If we built on the Australian characteristics of inventiveness and mateship, then we would be in a strong position to deal with today's, as well as tomorrow's, challenges.

Office Discourses: Which Attributes Are Given Authority in Institutional Classrooms?

Ann Kelly

A leitmotif that can be traced throughout the recent policy and procedural literature relating to the vocational and training sector is the necessity to develop explicit links between training and workplace practices. Indeed, the attainment of performance outcomes based on national occupational and industry standards is the sole purpose for virtually all training in this sector. Yet, the ways these linkages are constituted in the micro-environment of individual classrooms has received little attention by researchers[1] (McDonald, 1995).

This paper addresses a number of issues associated with the workplace-training institution nexus through an analysis of two transcripts of classroom talk. These were collected over a fifteen hour period in a TAFE office communications classroom. Firstly, the composition of the teacher's script and the ways that it is used to contribute to the enactment of an assistance event is explicated. Secondly, the varied responses to the teacher's behaviour and belief system by the trainees as evidenced in the transcripts are considered. Finally, following Gutierrez, Rymes and Larson (1995), some tentative suggestions are offered whereby trainees might be positioned somewhat differently so their narratives (Burgess and Carter, 1996) relating to office discourses, which are influenced by their direct and current experiences, are also counted as authoritative texts in institutional learning settings.

The workplace-TAFE training nexus

During the 1990s a characterising feature of vocational training rhetoric used in this country has been the necessity to have industry take a directive role. Within the clerical and administrative sector, which is the focus of this paper, there has been substantial involvement by industry at the national level which is manifest in a number of ways. Firstly, selected, and in some cases, self-selected, employers and their employees have participated in the development of a set of competency standards on which curricular modules have been based. Secondly, representatives of state Chambers of Commerce and relevant unions have been prominent in the establishment of the National Office Skills Formation Advisory Board (NOSFAB) and more recently, the Finance and Administration Industry Training Advisory Board. These boards are national bodies funded by government to guide training initiatives. Further powerful positioning by industry has occurred in relation to the continuing work of these structures through the assumption of the Chair and a number of executive positions on these boards by individuals with little direct involvement in training. Thirdly, trials of office training materials developed by NOSFAB such as *The Intrain, ICI Skill Track Evaluation* program, a computerised interactive system which identifies skills used at work, have been conducted in work environments. Finally, training itself is now often performed and accredited wholly within workplace settings.

For their part, vocational teachers have been encouraged to liaise more closely with industry. The purpose of this liaison for literacy teachers has included the implementation of fee for service courses across a range of industry sites, the writing of curricula and teaching resources which align with specific industry standards, and the conduct of government subsidised courses through the Workplace English Language and Literacy Program. This involvement has resulted in the development of varying levels of understanding of particular occupational and workplace discourses. Here I draw on Luke's (1995:15) notion of discourse, which in turn is derived from Foucault's work (1972), and influenced by both Kress (1989) and Gee (1990). Discourse is understood as comprising "statements and wordings across texts" that realise meanings for particular groups of people. These lexical expressions are not fixed but available to be appropriated differently within institutions and communities. Thus, "enterprise" teachers who work on site have the opportunity to see how the different texts used within that site mediate the social relations that operate between different occupational groups (Smith, 1984). In these roles, it is possible for teachers to note discursive elements such as: what oral and written texts are available to which groups of employees; who is allowed to compose new texts and adapt those in use; how oral and written forms of text complement one another (Heath, 1983); and how certain textual practices aimed at promoting the ideological goals of management are recognised as such by employees and subverted because they conflict with their own goals(Gee, Hull and Lankshear, 1996; Gowen, 1992).

Within the adult literacy field, researchers have compared literacy practices that occur both inside institutions and in communities and workplaces (Barton, 1991; Mikulecky and Ehrlinger, undated; Neilsen, 1989; O'Connor, 1994; Seddon, 1995; Street, 1995). Similarly, researchers working in the broader vocational sector, have compared practices, conceptualised in a more general way than adult literacy researchers, in a range of workplace and school or post-school settings. In a much-quoted Presidential Address in 1987, Lauren Resnick drew on her insights gained from workplace and community studies within cognitive psychology, cognitive science and sociological disciplines (Hutchins, 1980; Lave, Murtagh and de la Roche, 1984; Scribner, 1985) to present four dichotomies between school learning and other learning. She posited, firstly, that while development in school cognition is conceptualised as an individual accomplishment, out-of-school learning is contingent on the social arrangements or the participants. Secondly, learning in school is tool independent but in other settings, it is tool-assisted and tool-shaped. Thirdly, teachers in schools encourage abstraction through the use of symbols, whereas workers often reason interactively with material cues. Finally, an objective of school learning is the ability to generalise and transfer skills across contexts. In contrast, she suggested that the specificity of the learning may require different knowledge formations from those adopted in school environments. While recognising that a direct role for schools in preparing youth for work is problematic, Resnick concluded that reconstructed forms of "apprenticeship" may be effective alternative training structures. Such a system was adopted in Australia in the form of the Australian Vocational Certificate Training System in 1992 (Employment and Skills Formation Council).

In two studies more recent than those underpinning Resnick's claims, Billett (1994) found that both skilled and unskilled workers differentiated between institutional and workplace modes of learning and valued learning on site more highly because of the authenticity of the learning tasks and the access to experts. He further found that sophisticated cognitive skills such as problem-solving were required of workers across the four skill categories - professional, trades, skilled non-trade and unskilled that were canvassed. Total support for on-the-job training was tempered, however, by a belief that theoretical knowledge and understanding may not be available in some workplaces.

In contrast to the journal and report literature and folk knowledge emanating from work-based learning, another line of research has examined the ways and means classroom teachers working in institutional settings display their knowledge of workplace discourse and provide spaces for students to critique its veracity. One example is provided briefly here. Glynda Hull (1992) in a study of a pre-employment banking vocational program in banking and finance, reported that the teacher, Mr Parker, assisted the predominantly women students through his own modelling of acceptable behaviours, to construct a particular image that he believed would be acceptable in the banking industry. The attributes of such an image were confidence, politeness, deportment, punctuality, femininity and obedience. These qualities or "gendered codes" (Gaskell, 1992) have also featured in other pre-employment courses (Cockburn, 1987; Pringle, 1988; Valli, 1986). The teacher in Hull's study also provided technology, although of a slightly different kind from that the successful students would use, with which his students could simulate work as bank proof operators. While some students had experience as proof-operators prior to enrolling in the course, their contribution to the class discourse served as a minor "counterscript" (cf. Gutierrez, Rymes and Larson, 1995) and were generally ignored.

These findings have been useful in interpreting the data from a study I am undertaking to learn how TAFE teachers in Queensland design forms of talk to assist trainee office administrators to complete successfully written communication modules. The practices reported below through the use of transcripts of talk-in-interaction are analysed to show how one highly regarded communications teacher in a TAFE institute "managed" the classroom pedagogy through which two clerical trainees were socialised into "appropriate" work discourses.

The training setting

Traineeships were a Federal Labor Government initiative (Employment and Skills Formation Council, 1992) whereby subsidised work placements containing a formal training component were available. The two female students who are the focus of this paper were trainees employed in a health care centre for three days each week. On the other two days they attended a TAFE institute where they were enrolled in the module, Business Correspondence (Simple Drafts). They sat together and generally did not interact with the thirty or so other students present in the room as they worked through the module.

To be credited as competent, the trainees were required to "draft simple business correspondence from given instructions and information". The assessment task that has been developed from this very general performance outcome is the completion of a "project" whereby students must write a letter, memorandum and facsimile header that is related to a set office scenario that is described in a written form. Four criteria are used to determine competent performance: the text must be written using clear and concise language; spelling punctuation and grammar must be correct; the intended meaning of the correspondence must be readily understood by the recipient; and the written texts must be completed within a stipulated time frame. Further details about the course composition and delivery are provided as an endnote[3].

The competencies outlined above represent one level on a grid of clerical communication practices that have been derived from a sample of administrative assistants who are employed in offices. Mulcahy (1995:48) refers to this correspondence between generalised occupational practices and learning outcomes as a `control' configuration, wherein the outcome is prescribed and the multiple facets of the social environment in which the worker's activities occurs are lost. My analysis will show how further translations from actual practice are evident in the study guide and in the mediatory processes adopted by the teacher in interacting with the trainees.

In the next section of this paper, three transcripts of talk between the teacher and the trainees are presented. The audio-taped recording on which the transcripts are based took place during the second class of the module. Two aspects of the talk will be addressed in this paper: how the available interactive space was controlled and taken up by each of the participants; and the content of the talk that was realised in these interactions.

The construction of "authentic" work practices

Transcript 1

(Transcription conventions are listed in Appendix A at the end of the paper)

T is the teacher; Tr1 is the trainee

3 T . Now, if you were to contact someone else within your own office,
would you send them a letter? O..r, how would you do that?

4 Tr Just phone or [(alternative]...find out...)

5 T [Ye:s]

T =say if they've you need to. if someone say for instance, I need to contact B about something. and I can't get her on the phone, but I actually need to put some information down on paper for her,what.when it's internal, you don't want a letter a business letter, [what]=

6 Trl [Yes]

T =you do is you actually do a memo [and]=

7 Trl [Uh huh]

T =your organisation probably has memos that look a BIT like this [in]=

8 Trl [Yep]

=in that they've got a [two]-pronged aim subject.

9 Trl [Yes]

10 T But yours are quite different? Probably=

11 Trl =Yes=

12 T =probably a logo at the top, and they might only be on an A4 sheet? [quite smart]

13 Trl [Yes]=

14 T =They might actually be, ah, formatted already. on the computer=

15 Trl =ummm=

16 T =and you just have to call up the, er, macro is that what you do?

17 Trl Yep=

18 T Right and all you've got to do is input the information?

19 Trl Yeh

20 T So that's what we're going to write now. memos...

An initial look at the transcript above is likely to yield the observation that the exchange was dominated by the teacher. Of the 184 words that can be heard, only thirteen are spoken by the trainee. It can be noted that many of these are single affirmatives and all operate as confirmatory back-channels (Whalen and Zimmerman, 1987) to the talk.

The teacher also directs the topic change. A signal for a change of topic is the use of disjunct markers. In turn 3, "now" is used to mark the beginning of a topic, the practice of "contacting" another person within an office setting. In the fourth turn, the word "say" which is used twice by the trainee serves the purpose of signalling a second scenario, this time one involving the teacher's communicative practices. The use of the conjunction "but" in turn 10, and "so" in the final turn, operate in a similar way.

A further indicator of teacher control of both the content and process of the learning is the lack of take-up of responses by the trainee. There appears to be a feigned attempt at involving the trainee through the use of the three-part sequence device of initiation, reply and evaluation (Mehan, 1979) but only in so far as this serves the teacher's agenda to provide an overview. For example, on two occasions in this extract, the teacher invites a response from the trainee. In turn 3, she appears to be inviting her to participate in the hypothetical task of contacting another person within her own office context by providing a list of possible modes of communication. After hearing the first mode proposed, however, the teacher responds and changes the topic to another site, her own, and involves other participants, herself and another teacher. This occurs while the trainee is suggesting a further mode of communication in response to the teacher's original question. In turn 10, the trainee is invited to compare, initially, in a general way and then specifically using subject organisation as a criterion, the memoranda in her workplace with the example in the learning guide. When she affirms that there are differences, this response is ignored and the teacher continues with her script that is based on an imaginary model. Towards the end of this extract, in turns 17 and 19, the trainee confirms that the procedure of using macros is familiar to her. However, these responses, along with almost all of the others, are ignored by the teacher.

The dominant role adopted by the teacher might be seen as a normative component of teaching discourse. Because of their qualifications and experience, TAFE teachers, in contrast to tutors, are expected to teach, that is, to guide, to direct, to instruct. However, with the implementation of a modular system, and flexible processes, and with the employment of tutors, this role has become problematic for teachers. Locally, there are also contingent conditions operating. There is a limited time in which the tasks set out in each learning guide are to be completed. In a nominal time of ten hours, students are required to engage in proofreading activities and complete a proofreading test, practise the production of a range of memoranda, business letters and facsimile headers, and show they are competent by producing a letter, a memorandum and a fax header related to a particular topic under examination conditions. In the class there are about thirty other students, each required to engage in a similar way. Finally, there are only two teachers who must manage this situation.

Thus, the issues of control and assistance are very tightly meshed in this learning space. While the teacher in this extract, appears to be providing an overview of the subject of memo writing and encouraging student input, what is happening is that the teacher's agenda is being played out in a step-wise fashion with almost no deviations in consideration of the student's contribution. This is despite the fact that the student has direct and current experience that would make a valuable contribution to the learning context.

Ten Have (1991) has found a similar process occurring in the talk of doctor-patient interactions. He proposes four distinguishing characteristics of this discourse. There is a "preference" for doctor control for the interaction process, whether it is via questions, orders or propositions. The scope of the available responses to this format is restricted. In the present transcript, while more extended responses are available in some places, they are not allowed. Doctor's questions follow a particular sequence. A sequence, which is discussed in more detail below, is similarly visible in the teachers's script. Furthermore, drawing on Mishler's (1984) work, ten Have suggests that patients are often not informed of the reasoning process that underpins this sequence. Finally, when taking up the evaluative part in third turn sequences, it has been noted that doctors adopt a very restrictive form. In this interaction, there is little space available for turn-taking, and when the trainee attempts to insert her views, she is interrupted by the teacher. This can be seen in the overlapping behaviour evident in the transcript.

Tight agenda control by teachers has also been noted in early childhood settings. Heap (1986) and Baker and Freebody (1989) have shown how teachers follow a prepared text when introducing students to a new task or topic. One technique for enacting this course of reasoning has been the use of "virtual" tasks. To provide a context for the task of writing memoranda, the teacher begins the teaching sequence in turn 3 with the calling up of a "virtual" (Freebody, Ludwig, and Gunn, 1995) task performed by the trainee within the her own office space. This is followed by a second reference to a virtual office task, this time within the teaching institution where the teacher is the main actor and she is communicating with a teaching colleague. In step three, the two references to office activity are drawn together under the rubric of a "memo" writing. Again the trainee's site is brought into the metacommentary in relation to one feature of memoranda, the subject. She is asked to compare the way the subject is hypothetically organised in her work site with the example in the learning guide. Without any followup on the trainee's response, virtuality is again apparent in the next step where hypothetical memoranda, still located in the trainee's workplace, but now characterised by two new features, a logo and an A4 sized sheet, are introduced. The talk is then changed from features of a memorandum to a hypothetical procedure whereby models of memoranda are available via a mechanical process using a word processing program. The trainee is again invited to enter the talk by the question in turn 17: "Is that what you do?" and again in turn 19: "and all you've got to do is input the information?" The teacher's overview concludes with a return to the temporal task at hand, the task that is the purpose for the trainee's attendance in the class, but what is yet another series of"virtual" tasks to be performed.

In Table I have attempted to show how virtuality is interleaved with (i) materiality across the three forms of "product", that is, a memo or memos; (ii) the task, which is the writing of a memo; and (iii) the setting in which this action takes place. I have called the separate relevant strips of text "warrantable' because it is from the content of these, that my interpretations are drawn. For example, the use of conditionals, "if", "say", "probably" and "might" are markers which are used to support my claim for virtuality. In contrast, the marker "actually" is taken to signify reality.

Table 1: Virtuality vs actuality

WARRANTABLE TEXT STRIPS	PRODUCT	TASK	SITE
*Now, **if** you were to contact someone else within your own office*		Virtual by trainee	Trainee's workplace
*Say, **if** for instance, I need to contact B about something*		Virtual by teacher	Institution
*You don't write a letter a business letter…you do is you **actually** do a memo*		Virtual by a generalised "you"	Generalised workplace
*your organisation **probably** has memos*		Virtual by trainee's colleagues	Trainee's workplace
that look a bit like this	virtual - trainee's workplace & learning guide		
but yours are quite different?	virtual - trainee's workplace		Trainee's workplace
They might actually be, ah, formatted already	virtual - trainee's workplace		Generalised workplace
and you just have to call up the er, macro		Actual by trainee	Trainne's workplace
and all you've got to do is input the information?		Actual by trainee	Trainee's workplace
so that's what we're going to write now, memos	Virtual	Virtual by trainee	Virtual - generalised other

The first column contains segments of Transcript 1, called "warrantable text strips", with the "warrants" "if", "actually" and "probably" highlighted. The content of these segments is allocated to either a virtual or material product in the second column or a virtual or material task in the third column. The final column refers to the site that is being addressed.

The teacher control during this lesson, however, was more variable than is suggested by the choice of transcript above. The transcript below shows a much more symmetrical interaction between the teacher and the trainee, who is different from the trainee in the first excerpt. The teacher, however, still retains a dominant position in the talk. The trainee has completed a letter and her work is being corrected by the teacher who is sitting beside her at a small table. The two trainees have been laughing together just prior to this event.

Transcript 2

T is the teacher; Tr2 is the trainee; Tr by both trainees

129 T Great!

130 Tr Heh-heh heh-heh heh-heh

131 T *[In] regards to your invitation*, is that how you'd

132 Tr [(She)]

T speak if you got on the phone? (4.0)

133 Tr2 Only if I was leaving a message with the secretary?

134 T You would say *in regards to.* (said in a higher tone) I don't think
you'd speak that way [do you?]

132 Tr2 [I WOULD]

133 T We're trying to cut out formal-type of ways, so (1.0) you you write
as you [speak but but not with] all the slang

134 Tr [Heh-heh-heh-heh-heh]

T in it okay? (1.0) So. *i in regards to your invitation,* how's a little bit
better, easier way of saying that, (1.0)

134 Tr2 I can't come (4.0)

135 T Yes, I can't come *to the social club meeting this afternoon, at 2 pm.*

136 Tr2 That's putting it a bit blank isn't it? (2.0)

137 T Well how about we put our unfortunately. at the
beginning=*unfortunately, I cannot come to the, social club meeting*

> *this afternoon. I am not able*? you've just said you can't come you don't need to say I am not able to make it again. (The teacher continues reading aloud the trainee's letter.)

In can be noted that while the teacher's dominant role continues, there are spaces for the student to display her subjectivity as a participant with office experience. In turn 131, the teacher again uses a hypothetical context in the form of a phone conversation to reinforce her view about an appropriate written register to use in a business letter. This is taken up by the trainee who provides a context to support her choice of words. This is then parodied by the teacher and the trainee again counters the teacher's response, this time much more emphatically and without recourse to a context. Thus, here a discursive contest is set up which is resolved by the teacher stating a principle inherent in the pedagogic and moral code which guides her practice: "We're trying to cut out formal-type of ways. So. Write as you speak, but not with all the slang in it. Okay?" The use of the marked query (Maynard, 1991) "okay" is particularly effective in closing off the issue.

In the next section of the talk in this transcript a contribution by the trainee is accepted and incorporated into a revised text but again, the result is contested, although not as strongly as in the previous instance. This time the teacher suggests that an earlier source of disagreement (not in this excerpt) is inserted. There is not opportunity for the trainee to respond to this solution.

Again, there is evidence of a script that the teacher is working from. This time the focus is on the register to use in business letters: they should be placed somewhere between formal and informal polar positions. Spoken language conventions are used as a guide for the teacher and recommended to the trainee. The trainee, however, appears to have a different understanding of appropriate written and spoken text.

Another feature of this extract is the display of laughter by the trainees. This is carried over from a time prior to when the teacher began her corrective phase. It's difficult to know the function that this serves. However, one possibility might be to provide a "counterscript" which marks a form of "underlife" ((Gutierrez, Rymes and Larson, 1995:451). Gutierrez et al. suggest that "this descriptive framework highlights students' strategies of differentiation from teacher-dominated classroom discourse". Furthermore, in their classroom research, the authors found that rarely was this behaviour sufficiently disruptive to change the power relations in the classroom. A similar result is evident in this transcript where the trainees' laughter is ignored by the teacher.

Conclusion

In relation to reading pedagogy, Heap (1986:83) suggests that:

> the comprehension phase of traditional reading lessons operates, however unintentionally, as a vehicle of acculturation. Understanding cultural logic,

> within an d between provinces of meaning, and within and between concepts, is central to acquiring competence in a culture. Thus, as before, I wish to claim that reading comprehension lessons, with their attention to language use, are best thought of as lessons in comprehension of culture and the logic of its organization and possibilities. In the end, the logic of culture is the logic of language use. To learn one, is to learn the other.

In this paper, through the use of transcripts and their interpretation, I have tried to show how teaching and learning of business communication discourse are constituted by the three parties in this interaction. As in the reading lesson which is the focus of Heap's attention, there is a logic in the reasoning of the teacher which propels the lesson forward. Furthermore, elements of this logic can be detected in the transcripts. For these students, success in this interaction involves learning which writing registers are acceptable, the particular formats that will be approved and generally, which conventions are favoured by the teacher. This knowledge may, or may not, be compatible with the conventions that the students follow in their working environments.

Knowledge, however, is not the only thing that is being taught in this classroom. As Baker and Freebody (1989; 1989a) have shown in their work with young readers, these trainees are also being enculturated into the roles of students. They are being taught when, how and at what length they may speak. This is done through a range of mechanisms that are at the disposal of the teacher and the institution.

It is not intended that this examination be seen as an indictment of the teacher in this class. This particular teacher is very highly regarded amongst her colleagues and the students, including these trainees. It is also recognised that in some situations, there are problems inherent in delivering modular forms of competency-based curricula within flexible modes.

However, these trainees are different from students who have no direct and current experience in the discursive environment to which this curriculum relates. In contrast, many teachers who are responsible for business communication modules in TAFE institutes, do not have this direct experience and must resort to knowledge of the office conventions that operate in their teaching institutions, knowledge gained vicariously, or textbook information. It seems uneconomic in these times of stringency, if not insulting, not to make use of the students' insights (scripts) to enrich the teaching environment and thus create a middle ground (1995:445) as Gutierrez et al. recommend, "a place where the two scripts intersect, creating the potential for authentic interaction to occur".

NOTES:

1. McDonald's claim was that along with costing issues, the *perpetually* (his emphasis) difficult area of the relationship between industry and education and training providers was the "one other area" requiring increased attention (p. 2).

2. It is interesting to note that these same competencies reappear in the second level competency standards for Adult and Community Education managers and administrators that has recently become available.

3. The simple drafts module and seventeen others comprise the office skills course, the *Certificate in Office Skills*, which is nominally of 360 to 390 hours' duration. Each class of the "ten hour" module was organised in two hour periods. The delivery system was organised in a flexible manner with the provision of a learning guide which the students were expected to work through at their own pace. There was support available to them, however, by two teachers. In reality, one of the teachers provided a somewhat structured overview of each topic prior to its commencement by each student, while both responded to students' requests for information and clarification and corrected the students' work in stages. While the pedagogical format adopted might appear to be didactic, there were spaces available for teachers and trainees to bring their own knowledge of workplace practices into the learning environment within this framework.

References

Baker, C. D. and Freebody, P. (1989) Talk around text: constructions of textual and teacher authority in classroom discourse. In S. de Castell, A. Luke and C. Luke. (eds.) *Language, authority and criticism: Readings on the school textbook.* London/Philadelphia: Falmer Press.

Baker, C. D. and Freebody, P. (1989a) *Children's first school books.* Oxford, UK: Basil Blackwell.

Barton, D. (1991) The social nature of writing. In D. Barton and R. Ivanic. (Eds.) *Writing in the community.* London: Sage.

Billett, S. (1994) Authenticity: A socio-cultural perspective of vocational skill development. *The Vocational Aspect of Education*, 46(1), 3-16.

Burgess, H. and Carter, B. Narratives of schooling and the construction of pupilhood. *Discourse: Studies in the cultural politics of education*, 17(1), 15-24.

Cockburn, C. (1987) *Two track training: sex inequalities and the YTS.* Houndrills, Basingstoke: Macmillan Education Ltd.

Employment and Skills Formation Council. (1992). *The Australian Vocational Certificate Training System.* Canberra: National Board of Employment, Education and Training.

Foucault, M. (1972) *The archaeology of knowledge.* (A. Sheridan- Smith, Trans.) New York: Harper & Row.

BEST COPY AVAILABLE

Freebody, P., Ludwig, C. and Gunn, S. (1995) *Everyday literacy practices in and out of schools in low socio-economic urban communities. Volume 1.* Brisbane: Department of Education and Griffith University.

Gaskell. J. (1992) *Gender matters from school to work.* Milton Keynes/Philadelphia: Open University Press.

Gee, J. P. (1990) *Social linguistics and literacy.* London: Falmer.

Gee, J. P., Hull, G. and Lankshear, C. (1996). *The new work order: behind the language of the new capitalism.* St Leonards, NSW: Allen & Unwin.

Gowen, S. G. *The politics of workplace literacy: a case study.* New York/London: Teachers College, Columbia University.

Gutierrez, K., Rymes, B. and Larson, J. (1995). Script, counterscript and underlife in the classroom: James Brown versus Brown and Board of Education. *Harvard Educational Review*, 63(3), 445-471.

Heap, J. L. (1986) Cultural logic and schema theory: A reply to Bereiter. *Curriculum Inquiry*, 16(1), 245-79.

Heath, S. B. (1983) *Ways with words: language, life and work in communities and classrooms.* Cambridge: Cambridge University Press.

Hull, G. (1992) *Their chances? slim and none: an ethnographic account of the experiences of low-income people of color in a vocational program and at work.* Berkeley, CA: National Center for Research in Vocational Eduction, University of California at Berkeley.

Hutchins, E. (1980). *Culture and inference.* Cambridge, MA: Harvard University Press.

Kress, G. (1989) *Linguistic processes in sociocultural practice.* Oxford, England: Oxford University Press.

Lave, J., Murtagh, M. and de la Rocha, O. (1984). The dialectic of arithmetic in grocery shopping. In B. Rogoff and J. Lave. (Eds.) *Everyday cognition: its development in social contexts.* Cambridge, MA: Harvard University Press.

Luke, A. (1995) Text and discourse in education: an introduction to critical discourse analysis.In M. W. Apple, (ed.) *Review of Research in education.* Vol. 21, 1995-1996, 3-48.

McDonald, R. 1995. *Costing training and assessment: Issues Paper.* Adelaide, National Centre for Vocational Education and Research.

Maynard, D. W. (1991) The perspective-display series and the delivery and receipt of diagnostic news. In D. Boden and D. H. Zimmerman. (Eds.) *Talk and social structure: Studies in ethnomethodology and conversation analysis.* Polity Press.

Mehan, H. (1979) *Learning lessons: social organization in the classroom.* Cambridge, MA/London, UK: Harvard University Press.

Mikulecky, L. and Ehlinger, J. (undated) *Training for job literacy demands: what research applies to practice.* , University Park, PA: College of Education, The Pennsylvania State University.

Mishler, E. (1984) *The discourse of medicine: Dialectics of medical interviews.* Norwood, NJ: Ablex.

Mulcahy, Dianne. (1995) Performing competencies: of training protocols and vocational education practices. *Australian and New Zealand Journal of Vocational EducationResearch*, 4(1), 1966, 35-67.

Neilsen, L. (1989). *Literacy and living: the literate lives of three adults.* Portsmouth, NH: Heinemann.

O'Connor, P. (1994) Workplaces as sites of learning. In P. O'Connor. (Ed.) *Thinking work:theoretical perspectives on workers' literacies, Volume 1.* Leichhardt, NSW: ALBSAC.

Pringle, R. (1988) *Secretaries talk: sexuality, power and work.* Sydney: Allen and Unwin.

Resnick, L. (1987) The 1987 Presidential Address: learning in school and out. *Educational Researcher.*

Scribner, S. ((1985). Knowledge at work. *Anthropology & Education Quarterly*, 16(30), 199-206.

Smith, D. E. (1984) Textually mediated social organisation. *International Social Science Journal*, 36(1), 59-75.

Street, B. (1995). *Social literacies: critical approaches to literacy in development ethnography and education.* New York: Longman.

ten Have, P. (1991) Talk and institution: Are considerations of the "Asymmetry" of doctor-patient interaction. In D. Boden and D. H. Zimmerman. (Eds.) *Talk and social structure: Studies in ethnomethodology and conversation analysis.* Polity Press.

Valli, L. (1986) *Becoming clerical workers.* Boston: Routledge and Kegan Paul.

Whalen, M. R. and Zimmerman, D. H. (1987). Sequential and institutional contexts in calls for help. *Social Psychology Quarterly*, 50, 172-185.

APPENDIX A

Symbols used in the transcriptions in this paper

...	deleted talk
( )	words spoken but not audible
(She)	best guess for word/s spoken
:::	lengthened sound
[ ]	simultaneous sound
=	no interval between turns
capitalisation	loud volume
underlining	emphasis
(3.0)	pause timed in seconds
italics	text read by teacehr
?	interrogative intonation

Flexible Delivery: One practitioner's point of view - What has to change when you go flexible?

Anne Kiley

Discussions of flexible delivery, multi-media delivery, distance education and open learning are concerned with a wide range of issues including quality, cost-effectiveness, operational ease, and achieving a fit between the needs and expectations of the learners and the outcomes you can provide them. In this paper I want to concentrate on the impact of a change to flexible delivery for the ALBE practitioner. I will deal with two phases: firstly, materials development; secondly, the delivery in flexible mode itself.

My contention is that flexible delivery has particular challenges and advantages to those of us working within ALBE.

1. Developing the materials

This phase is probably one that many practitioners will not experience, now that more and more "pret-a-porter" courses are becoming available on the Australian adult education market. However when a group of us from Canberra Institute of Technology developed the Certificate in Adult Education (CAGE) Year 10 Equivalent in 1992 there were no choices: if we wanted it we had to build it ourselves. What follows is some recollections and insights from that experience.

(i) You can't put on paper/multi-media what you would have delivered in the classroom. It just doesn't translate. This is a common experience when developing FD materials, and is one of the reasons why a lot of first generation FD modules and packages don't function terribly well. The leap is far greater than just committing to your materials what was in your lesson notes and handouts. Instead there must be a mind shift that the average practitioner like me may find quite painful because most of the "givens" of the teaching/learning experience have changed.

(ii) These changes have enormous consequences for you as a teacher: you can no longer rely on your style and charisma as a classroom practitioner to make the material palatable: what's on the page or screen is **it**.

(iii) "It" is fixed: when you've produced your materials you are stuck with them. Because they need to be produced/published/printed to a reasonably high level of sophistication to work well, they tend to be immutable once produced: no tinkering. In most institutionalised settings, this means all of you who might teach on the newly "flexibilised" program are stuck with these materials that have been so time-consuming and costly to produce. This means that the outcomes and inputs are fixed, so that what is labelled "flexible" is often extremely inflexible: frozen teaching materials with personal "ad lib" variations are hardly possible. There is consequently not much scope for changing the emphasis of the material, supplementing it, treating at greater depth, moving out of the classroom and so on.

(iv) The process of developing these materials may make you question the validity of your approach to learning objectives; you will have had exposed what you do in the classroom, and your overall philosophy of education, to a degree that it never will in conventional mode. Materials development for public use is a very self-conscious business; if you have any doubts or reservations about yourself as a practitioner, they will come out during this process.

(v) The same can be said of your confidence in and respect for your colleagues. If you have been involved in the collaborative process of producing these materials, you and they have quite possibly been compromised by the process (the Abilene conspiracy at work). What's on the page or tape is probably not the way you would have done it yourself: it's had the edges knocked off by your colleagues. If you've ever relied on handouts someone else has produced (even those whom you admire as practitioners) you will know that it doesn't require a major difference of opinion in your pedagogy for you to find their materials unusable. It would be feasible to find that mutually developing materials was the start of bad blood in a previously harmonious department, so confronting can the process be.

2. Delivery

Flexible delivery can have a range of advantages from the clients' point of view (I use the word client to mean either the student who comes to learn, or the referring or sponsoring organisations or individuals):

(i) Enrolment can be at any time of the year, even across traditional holiday periods. When an ALBE student decides they want to do something about their education needs, they want to do it **now**. Before flexible delivery we at

Canberra Institute of Technology had originally one entry point a year (February) and latterly two entry points a year.

(ii) Multiple entry/ multiple exit is ideal for ALBE clients.
If the course is modular as well as flexible, students can acccumulate modules which they are credited with and which they do not have to repeat as part of subsequent enrolment should they fail to complete the whole course on their first enrolment. This system suits our clientele admirably: the juvenile recidivist, the harassed teenage single parent, the over-committed mother-of-three. It is in itself sufficient reason never to return to a more conventional lock-step approach.

(iii) Students undertaking flexible delivery courses tend towards task orientation, not time orientation. In contrast their primary and high school experience will have been almost entirely time-oriented. Until the later years of high school and into tertiary education, most students do not develop the inner maturity to see their learning as a series of

(iv) Flexible learning is outcomes driven; this can be a minus and a plus. On the down side students often ignore the instructional material in a module and head for the jugular: the assessment. The consequence is that they scrpae through the competency objectives of the module, but have actually only marginally improved their knowledge and skills base. On the other hand, they are able to absorb from the learning materials only those bits of the subject matter they need to fill in what is often a fractured knowledge and grasp of the content from previous learning. If they had to sit through traditonal delivery of those already partly known objectives, they may well have voted with their feet and we would lose them.

(v) Having the course material in front of you and all you have to do is become competent in it and achieve the objectives of the assessment is a liberation to many students. For some personalities it is the unlocking of all their problems as they commune with the material and the teacher and just get on with it. For others the major self-revelation is that it was not the teachers at school who were their impediment: it was their own inability to come to grips with the material, or to engage with the gaining of new skills or knowledge.

The down-side:

(i) A lot of the group dynamics are lost. Ten students in a Learning Centre working through a core timeslot of a subject will be working on ten different activities. The more fragile the learner (and ALBE learners are traditionally quite fragile) the harder it is for them to adapt to this form of self-sufficiency. Flexible delivery learners need to be self-motivated, self-contained, able to take individual responsibility and work cumulatively and intensively.

(ii) Deriving your information off the printed page/ video or audio tape/ Computer Assisted Learning can be very tedious. Time and again in the literature on distance learning and flexible learning we hear of the term "independent learner". It is not a term we can confidently apply to many of our clientele. Our students' long suits are not their strong, independent reading skills, their affinity with the printed page, their ability to absorb theory. They are often kinaesthetic learners whose lifelong difficulties with Literacy and Numeracy skills have come from their inability to draw the long bow of relevance between the disciplines in the classroom and their applicability to life. Often this has been exacerbated by traditional teaching methods which have failed to make those connections anyway.

Aboriginal and Torres Strait Islander adult education histories and their relationship to the development of academic writing skills

Bill Langlands

This paper outlines the findings of a research program involving one hundred and twenty two Aboriginal and Torres Strait Islander adults. They were the intake of students over four semesters studying for a two year long Certificate in General Studies. This catch-up course was run in the Faculty of Aboriginal and Torres Strait Islander Studies (FATSIS), at the Northern Territory University (NTU). These students were mostly from urban backgrounds, had struggled at school and wanted to upgrade their skills, undertake further education, obtain employment, help family or gain satisfaction through personal achievement. Follow up of the students after the data was collected revealed that

- only 15% of the original cohort eventually graduated.
- 25% of these students who eventually graduated struggled with the course and took longer than the expected two years to graduate.

The questions asked in the research are, "Why did this group fare so badly at FATSIS, despite the conscientious efforts of committed staff?" and, "What could be done to improve these results for future intakes?" To explore these questions analysis was undertaken, firstly of students' own written educational histories, from a social, cultural and historical perspective and secondly of samples of their writing, from a linguistic perspective.

1. Students' Writings About Their Own Education Reveal a Mismatch of Expectations and Attitudes

Students' own written education histories powerfully demonstrated that the primary cause of the group's failure to cope with education at school and at NTU was a fundamental mismatch between attitudes and expectations of the students, derived from their social, cultural and historical background, and the attitudes and expectations implicit in Western, 'schoolish' education. Some of the key features of this mismatch indicated in students' writings were

In the school Situation

(a) their primary focus while in school on relationships, social activities and sport rather than academic learning.

(b) concern that succeeding in academic learning might lead to - denial of their identity, culture and way of life, the betrayal of the history of indigenous resistance to assimilate and the adoption of uncomfortable, foreign and even 'bad' ways.

(c) that academic learning seemed boring, uninteresting and irrelevant and that it become less relevant as they progressed through school.

(d) that there was a clash of learning styles (informal relationship centred learning vs formal goal orientated learning) causing students to feel less comfortable, less successful more confused and out of place as school progressed.

(e) their academic failure lead to a sense of personal failure, self devaluation, not fitting in and being unprepared to cope in the world beyond school.

(f) the development of a 'vicious circle' of deteriorating classroom performance and disruptive behaviour reinforcing the negative stereotypes of teachers and non-indigenous students leading to some indigenous students feeling that some of their teachers and some non-indigenous peers were racist, unsympathetic, unfriendly and confrontational.

(g) that teachers and the school system were ill equipped to take into account the social, cultural and historical background of indigenous students and communicate the relevance of what they were teaching for the students personally or for their future education and employment.

(h) that the world as represented in the curriculum made them feel like foreigners who 'didn't fit in'. The curriculum pressured them to assimilate to majority Australian culture and to deny their identity. They felt unable to respond positively because the curriculum did not take account of their background, start where 'they were at', enable them to develop the academic knowledge, skills or the understandings of the wider Australian society and its systems they needed for them to see themselves as anything but outsiders in education and employment.

In the relationship of the home to the school

(i) that parents and adult carers in the homes of indigenous students has similar negative experiences of school and academic learning. They were often too unsure of themselves to relate to teachers and other school authorities. Not having progressed far academically themselves they did not understand that much academic learning needs to be done out of school and were unable to help their students with study.

(j) that parents/carers saw 'putting pressure' on their students to succeed as a bad thing and consciously or subconsciously resisted school expectations to discipline their students to undertake study outside school.

(k) that few indigenous parents/carers could provide the expected structure and support that was needed if their children were to develop the study behaviours of successful students. Parents allowed their children far greater autonomy at a much earlier age than non-indigenous parents. Few students developed self discipline in study.

(l) very frequent absences from school were often not discouraged by parents/carers because of their own negative feelings about school.

In the home, family and wider situation

(m) that few Aboriginal or Torres Strait Islander families organise their home around the priority of their children's academic studies. Students reported that their homes were always full of people. They were noisy, chaotic, busy places. Families went often out and there was little opportunity to fit regular study time into family life. Children often stayed up late. Being alone to study and read was difficult in most indigenous homes and in some it may in fact have been considered unacceptable anti-cultural and anti-social behaviour.

(n) that most Aboriginal or Torres Strait Islander families are large and accommodation is often crowded. There are seldom places for private study and other family members often damage, use or lose study materials. Families on low incomes tend not to make the purchase of books, reference materials, stationery and other study equipment a priority.

(o) that few indigenous families make use of public libraries or study facilities.

(p) that home relationships are frequently disturbed by arguments, violence, substance abuse and other kinds of abuse, parental/carer relationship problems and family breakdowns. Many families have only one adult carer who frequently has an inadequate income. They struggle to cope with the basic needs and demands of the family let alone their academic education. In some homes crime, court proceedings and time in prison can damage the family fabric. Many young people leave home before they leave school ending up homeless or in other chaotic living situations. Relatives and friends from outside the immediate family unit may help in these circumstances but for many young people a peaceful home environment is non-existent and consistent study virtually impossible.

(q) that students may stay away from school because of ill health, being tired from staying up late, funerals, special family occasions, family disputes or to care for sick siblings or relatives.

(r) that families move frequently, often to be near or to help family members or because of problems in family relationships, making for disjointed school programs.

(s) that serious relationships with the opposite sex in the early and mid-teens, a natural development from indigenous young people's primary social focus and autonomous upbringing, provide further distraction and frequently leads to pregnancies which invariably spell an end to schooling.

(t) the link between school success and well paid and fulfilling employment is not well established in indigenous family experience. In most families there is very little school or employment success. Few members have had good jobs, many are unemployed. Most students are tempted to think, "What's the point of working hard at school? Where will it get me?"

(u) that sport becomes a major focus of many indigenous families providing an opportunity for social life, achievements, recognition and a sense of self worth and often compensating for and supplanting academic pursuits.

2. Students' Writings About Their Own Education Reveal a Mismatch of Expectations and Attitudes Regarding Language

If we shift from this more general focus to one which specifically relates to expectations regarding language use, analysis of students' educational histories revealed that

(a) some students did not use English at home. Those who did mostly used a dialect of Aboriginal or Torres Strait Islander English. For this reason the facility of many in Standard Australian English (whatever that is) was restricted.

(b) the lack of focus on school success and academic learning meant that almost no students have good facility with academic registers of language.

(c) there is almost no interest in reading and writing in their homes.

(d) there was almost no literature and very few people who provide models of readers or writers in students' homes.

3. Linguistic Analysis of Student Writing

An analysis of students writing using the theoretical framework of systemic functional linguists as found in the work of writers such as Halliday (1985) and Halliday and Hassan (1985) concentrate on samples of three different kinds of academic writing completed over one semester by a representative selection of eleven students drawn from the original group.

The analysis demonstrated that the features of students' writing, in line with the general points about language made from their educational histories, were

(a) Aspects of students writing demonstrated that they were not fully aware
  - of appropriate registers, that is textual indicators of field tenor and mode required by the writing context in which they were engaged.

- of aspects of the educational context, the wider cultural context and other related texts that might impinge on their writing

(b) They relied heavily on oral features of language drawn from their largely oral culture rather than use features of written language with which they were less familiar. Their writing
  - demonstrated low levels of lexical density with little reliance on nominalisation common in written language registers,
  - showed almost no familiarity with the feature of grammatical metaphor (nouns bing used to represent verbs eg. *applause* for *applaud* and *announcement* for *announce*) common in successful academic writing.
  - relied on an oral or situational context which they did not make explicit in their writing, thus making it difficult for readers unfamiliar with this context to understand their meanings.

c. Their writing exhibited features of Aboriginal English such as
  - unmarked plurals (eg. They had two big dog.)
  - unmarked possessives (eg. It was my brother bike.)
  - marking possessive with 'for' (He was father *for* John)
  - omission of the article (We were playing game of footie.)
  - added pronouns (My uncle *he* went.)
  - additions to the pronoun system (eg. *We mob*, *Us two*.)
  - inclusion of participles (perfect verb forms) for simple past (eg. We went and we *seen* our new house.)
  - use of invariant don't (eg. He *don't* read much)
  - use of double negatives (eg. He *don't* work *no* more.)
  - use of 'never' as a simple negative (eg. We *never* did that this morning.)
  - lack of concord between verb and noun (eg. All the boys *was* running)

The analysis of the writing of students who, able to overcome the aspects of the mismatch between the university environment and their own background, stayed on in the Certificate in General Studies showed a steady development of most aspects of academic writing. The feature of grammatical metaphor being the least successfully adopted. The success of some of the group in completing their certificates demonstrated that further mastery of academic writing did occur. The huge drop-out and failure rate for the group (85%) however demonstrates that much more needs to be done if Aboriginal and Torres Strait Islander students are to master academic writing and succeed in Western academic education. The analysis of students' educational histories, including the statistics relating to their efforts in FATSIS shows that the problem cannot be solved by a focus on improving academic writing alone or any other specific isolated instructional problem for that matter. The struggles of Aboriginal and Torres Strait Islander students are in fact a consequence of the failure of the education system as a whole to cater for the needs of these students. There is in fact a fundamental clash between the expectations of educational institutions and the social cultural and historical background of the students including their linguistic expectations.

4. Overcoming the Mismatch

What can be done about this mismatch? I would like to answer this question by using a linguistic analogy. What we are faced with here is a problem often faced by translators when they are trying to find a way of expressing meaning in one linguistic and cultural system with those in another. There is a mismatch between meanings in source language and culture and those of the target language and culture. These kinds of translation problems are overcome by expanding the translation to explain aspects of the source culture and its relationship to the source language, or what Halliday (1985) would call 'context of situation' to those in the receptor language. What is needed in the Australian education system is a concerted, organised and conscious effort by teachers, educators and administrators to make 'a good translation' of the system for indigenous students.

This will included in general

(a) the abandonment of the unstated assimilationist goals that dominate education in Australia (*Students must all become like white middle class people of Anglo origin.*) and the empowerment of all students to understand our multicultural society and adopt language and behaviours appropriate to specific social, cultural and employment situations.

(b) the training of education support workers, teachers, educationalist and administrators in order that they understand the cross cultural nature of their work. That is so that they become aware of their involvement in a translation process and aware of the likely mismatches which may occur between the indigenous cultures and the culture of the education system.

(c) the training and employment of more indigenous education support workers, teachers, educationalists and administrators who can see the problem from both sides and so provide encouragement and become models of the translation process for indigenous and non-indegenous staff and students.

(d) the development of more inclusive curriculum - meaningful and supportive of both indigenous as well as non-indigenous cultures and languages.

(e) frequent open class discussion about the purposes of education and all aspects of its relationship the context of the wider society including later employment.

(f) developing curricular in a modularised form capable of flexible delivery and the design of courses, timetables and institutional settings that provide opportunity for students to make up for absences and gaps in their education.

(g) support for out-of-class academic work in order to overcome the clash between the home situation of students and expectations of studies. This would include setting up home work centres and making tutors available. It would also include the education and encouragement of families by explaining the needs of students and showing how clashes between home and study expectations might be overcome.

(h) the establishment of student work groups where students help each other to achieve academic success in order to overcome the other aspects of peer pressure that may militate against successful academic achievement.

(i) provision for students of empathetic career guidance and suitable part time employment, while still in school, in order to help students set goals and connect academic learning with employment.

In language education it will be necessary to

(j) take an approach to language which demonstrates the value and purpose of all forms of language not just SAE, academic English and 'bookish' language.

(k) acknowledge the need to translate texts, including the 'context of situation' as well as the intertextuality and wider textuality with which they are associated, to students from the first years of school.

(l) stress the social purposes and value or many forms of text

(m) demonstrate the differences between, the value and social purposes of oral and written language forms by translating texts from oral to various written forms and the reverse.

(n) include a wide range of texts from a variety of backgrounds, both indigenous and non-indigenous.

(o) critically analyse texts with different cultural, social and historical backgrounds and purposes from an early age enabling both indigenous and non-indigenous students to interpret these texts and their source cultures.

(p) teach the use of many varieties of written text registers by providing example texts and enabling students to read and write these by deconstructing and constructing them in group and individual practice thus empowering students to use these registers in employment and further education.

5. Conclusion

While this study focuses on a limited sample of Aboriginal and Torres Strait Islander people the writer believes that census data demonstrates that its findings can be generalised nation wide. The mismatch described above has ensured that the education system has largely failed indigenous Australians. For this reason the majority are poorly education and have little chance to obtain decent jobs, decent incomes and equal opportunities in the land which is after all their own. Indigenous Australians, while they comprise only 1.6% of the population nation wide, will everywhere continue to feel a sense of discontent and injustice until their education is improved. In the NT they make up nearly 25% of the population and in some areas of Australia, for example the Kimberley region of WA and far Northern Queensland they predominate. These areas of will remain concentrations of unrest, poor health, high crime, disproportionate imprisonment, racial disharmony and injustice until educators become translators.

In the current political and economic climate we face shrinking budgets, enterprise bargaining, a push for higher productivity and best practice coupled with attempts to bring the VET and Secondary education systems closer and closer together. At the same time those on the political right are demanding that we do not single out anyone for special treatment. The writer believes the approaches to education advocated above will satisfy many of these demands by not only benefiting indigenous people but many others who have stuggled to cope with their own forms of mismatch with the education system. These include migrants and those from lower socio-economic backgrounds.

References

HALLIDAY, M. (1985). *Spoken and Written Language.* Deakin University Press, Burwood, Victoria.

HALLIDAY, M. and HASAN, R. (1985). *Language, Context, and Text: Aspects of Language in a Social-Semiotic Perspective.* Deakin University Press, Burwood, Victoria.

A new work order: Some implications for being literate in a global economy

Colin Lankshear

I The changing work world: multiple literatures

As if direct experience alone were not enough to indicate major changes in the nature and conditions of work, we are regaled on all sides with textual accounts of an emergent "new capitalism" and its attendant new work order. Within my own milieu I encounter on a daily basis at least five discernible "literatures" which, in one way or another, influence how we understand, frame, and experience work in "new times".

One, which I will call a "serious social science" literature, comprises heavy duty research and analysis steeped in formal traditions and norms of social science. Among the texts in this literature are some which aim to provide detailed scholarly descriptions and analyses of changes in world capitalism as a whole. They include books like Michael Best's *The New Competition* (1990), Fred Block's *Postindustrial Possibilities* (1990), Stephen Cohen and John Zysman's *Manufacturing Matters* (1987), Martin Carnoy et al's *The Global Economy in the Information Age* (1993), Rosabeth Kanter's *The Change Masters* (1983), Michael Piore and Charles Sabel's *The Second Industrial Divide* (1984), and Lester Thurow's *Head to Head* (1992). Other texts take up more specific themes and subject them to close analysis: for example, Edward Chen's *The Newly Industrialized Countries in Asia* (1985), Giovani Dosi et al's *Technical Change and Economic Theory* (1988), and Ezra Vogel's *Japan as Number One* (1979).

A second, highly influential and important literature can be found in the burgeoning contemporary genre of "fast capitalist texts" (Gee 1994; Gee and Lankshear 1995; Gee, Hull and Lankshear 1996). These texts, produced mainly by business managers and consultants, seek to attend as textual midwives at the birth of a new "work order" within a new capitalism: books such as Joseph Boyett and Henry Conn's *Workplace 2000 (1992)*, Tom Peters' *Liberation Management (1993)*, Peter Drucker's *Post-Capitalist Society (1992)*, and Hammer and Champy's *Reengineering the Corporation* (1993). They announce a new "enchanted workplace" where hierarchy is dead and "partners" engage in meaningful work amidst a collaborative environment of mutual commitment and trust (Gee and Lankshear 1995: 5). These texts are typically - although not always - characterised by an aggressive, punchy racy style. They are long on generalisations and dramatic "case studies" and "snapshots", and authorial energy and enthusiasm. They are usually considerably shorter on close sustained argument, careful attention to contrary evidence, and significant appeal to "serious" research.

Positioned between these literatures we find works, like Robert Reich's *The Work of Nations* (1992), which approximate to the more formal scientific scholarly literature in making serious appeals to research evidence and developing at length a carefully constructed argument. On the other hand, they also approximate to fast capitalist texts in having quite explicit and overt ideological barrows to push, and in pursuing maximum market share by employing an accessible populist style, punchy eye-catching case studies, and by avoiding unwanted evidential complications in the argument.

Policy documents and reports comprise a fourth literature on the new capitalism - as any Australian familiar with the government and business-driven agendas of training reform and workplace restructuring is well aware. Finally, a fifth literature can be discerned in the form of what might be called "primers": attempts to provide brief overviews of the new capitalism, sometimes as stand alone informative tracts, and in other cases as bases for larger purposes.

At the risk of overgeneralising a little, some significant differences can be found in the ways these respective literatures frame the new capitalism and the new work order: for example, differences in scope, standpoint and performance. In terms of scope, for example, fast capitalist texts and policy statements tend to address a narrower range of features and factors than do serious social science texts and scholarly primers. In terms of standpoint, fast capitalist and policy texts are typically produced by - and mirror the predilections of - *change agents*, whereas serious social science accounts and many primers adopt a more descriptive and analytic (or synthesising) stance: being more concerned with mapping, describing, analysing and explaining change, rather than speaking on behalf of change. Accordingly, the performance of fast capitalist and policy texts is typically more exhortative/hortatory and "enactive" or "projective" (Gee and Lankshear 1995: 8) than occurs in the case of social science accounts. They urge, cajole, browbeat, and proselytise on behalf of values and visions their authors hope to see actualised. Notwithstanding all the demands of the new work order on personal energies, private time and space, and the benefits of old style long term security, the new capitalism is portrayed in fast capitalist texts as an exciting context where there are undoubted demands and risks, but where rewards are high, stress is the not unreasonable trade off for excitement and expanded opportunities, where living with change becomes the preferred alternative to social and economic stasis, and where business values have been humanised to the point where they are touted as the rightful moral hegemony of the future. By contrast, more "scientific" texts seek to convince us that they are describing accurately and explaining plausibly a world that *is*; i.e., to win our allegiance to their veracity, as opposed to winning allegiance to the world they faithfully describe.

Of course, the situatioen is a littl more complex than I have described. "Serious social science" texts in the vein of Rosabeth Kanter's (1983) *The Change Masters* perform crucial ideological work in much the same direction - and, ultimately, on behalf of many of the same interests - as we find enacted in word and deed by fast capitalist authors. In addition, those texts - like Reich's *The Work of Nations* - which I have identified as "intermediate" texts, reveal varying mixes of scope, standpoint and performance: as President Clinton's Secretary of Labor, Reich is at once a conscious and salaried change agent and advocate, as well as a social scientist. Nonetheless, important differences in scope, procedure, evidential basis, and intent remain across these broad "genres".

II A social science perspective on the new work order

In a rigorous and systematic account which draws extensively on research from the past forty years in economics, statistics, demography and technology, Manuel Castells (1993) identifies five fundamental features of the new world economy, and four factors which influence the relative success or failure of national economies operating under conditions of the new capitalism. The picture which emerges is, in many ways, consistent with that sketched by fast capitalists. It does, however, go considerably further, and intimates issues and concerns that fall far outside the scope of the fast capitalist "storyline".

The first feature named by Castells is that the bases of productivity in the new capitalism depend increasingly on applying science and technology, as well as on the quality of information and management employed, within processes of production, distribution, consumption and exchange (Castells 1993: 15-16). Increased productivity is no longer a matter mainly of just injecting more labour and/or capital into the production process. Instead, the edge in productivity is generated by "new inputs" consisting of "the deeper penetration of science, technology labor skills, and management know how" (ibid: 16). Sustainable comparative advantage no longer depends effectively on a nation's natural resource endowments. Nations like Australia, Great Britain, New Zealand, Canada and the US, are now forced to build their economies on "higher value-added production", drawing on "more manufacturing and marketing skills", and "more financial and other services" (Levett and Lankshear 1994: 29). This depends on increased use of high technology and abstract thinking - or what Reich (1992) refers to as the work of symbolic analysts. Major innovations during the past thirty years, which have underwritten new spheres of production and vastly enhanced productivity, are all the results of "applying theoretical knowledge to the processes of innovation and diffusion". These include microtechnology and microelectronics, biotechnology and aerospace (Levett and Lankshear 1994: 31; Sharp 1986).

Second, the new capitalism is characterised by "an ever growing role" being played within the organisation of work and the enhancement of productivity by "the manipulation of symbols" (Castells 1993: 17). Within the new work order we find a pronounced trend away from *material* production and toward *information* processing activities. As Castells (ibid) notes, this trend is in terms of both the proportion of GNP accounted for by trade in "data, words, oral and visual representations" (Reich 1992: 177), and the proportion of the workforce employed in such activities: whether as "foot soldiers of the information economy ... stationed in "back offices" at computer terminals linked to world wide information banks" (ibid: 175), or as "symbolic analysts" involved in the high order "problem solving, problem identifying and strategic brokering activities" performed by research scientists, design and software engineers, management consultants, writers and editors, architects and architectural consultants, marketing strategists, and many others besides (c.f., Reich 1992: 175). According to Castells, the quality of the information and efficiency in acquiring and processing it "now constitute the strategic factor in both competitiveness and productivity for firms, regions, and countries" (1993: 17-18; Guile and Brooks 1987).

Third, the new capitalism reflects dramatic changes from the "old" capitalism in the ways production and other economic processes are organised. This, it transpires, is the feature most heavily stressed in the fast capitalist storyline. There are two facets to the new mode of organisation. The first is that goods production has shifted from standardised mass production to *flexible specialisation* and increased *innovation* and *adaptability*. This allows for optimal customisation and diversification of products, and enables quick shifts to be made between different product lines.

> Circumstances in the late twentieth century, including market fragmentation, global resource uncertainties and microelectronic technology, have combined to provide small-scale flexible manufacturing with commercial advantage over large-scale mass production. More and more of the world's goods require not standardisation and modest quality associated with mass production, but higher quality, continuous innovation, design and production changes. (Levett and Lankshear 1994: 39-40)

This turn to flexible production marked by high quality presupposes the second facet of change within the organisation of work, which is essentially a change in the *social relationships* of work. The "vertically integrated large-scale organisations" of "old" standardised mass production capitalism have given way to "vertical disintegration and horizontal networks between economic units" (Castells 1993: 18). This is partly, but only partly, a matter of the flatter hierarchy, enhanced egalitarianism, and increased devolution of responsibility to individual employees so central to the fast capitalist account of new capitalism, and the creation of quality circles, multi-skilled work teams with interchangeable tasks, and enlarged scope for workers to participate in decision-making on matters of management as well as more immediate aspects of task completion Levett and Lankshear 1994: 39-40). As Best observes, the new competition firm or corporation gains its edge by means of continuous innovation and improvement.

> Improvement is always possible and ideas can come from everyone including consumers, workers, suppliers, staff and managers. As a social process, innovation involves the interaction of people engaged in functionally distinct activities. It demands persistent and comprehensive re-examination of productive practices ... A strategy of continuous improvement demands an organization in which a persistence to detail operates at every activity level. The persistence to detail is about incorporating learning from doing into improved ways of doing. (Best 1990: 12-13; Levett and Lankshear 1994: 40)

Furthermore, horizontal relationships of co-operation, consultation, co-ordination, in the interests of flexibility, decentralisation, and adaptability in production, often extend beyond the confines of a specific business or firm to include other "partners" within an integrated productive enterprise: such as collaborative arrangements between manufacturers and suppliers which help keep overheads and stock inventories down, allowing competitive pricing which can undercut opponents. Increasingly, "the organizational pattern of decentralization and flexibility is ... characteristic of large [as well as smaller] corporations, both in their internal structure and in their relationship to a network of ancillary firms, as is illustrated by the "just in time" supply technique introduced by the large Japanese automobile firms" (Castells 1993: 18).

The fourth feature of the new capitalism is that the market and the competition is now global. Labour and capital, production and management, technology and information, and competition itself, are today organised across national boundaries (ibid). An individual worker's competition is no longer just the person down the line looking for the job but, rather, entire labour markets abroad - anywhere in the world. What holds for the worker holds equally for the corporation. It is simply no longer possible to think of a national economy or national companies in the manner of earlier times. This has far reaching implications for workers in the new work order.

> [W]hen an "American" company like General Motors shows healthy profits, this is good news for its strategic brokers in Detroit and its American investors. It is also good news for other GM executives worldwide and for GM's global employees, subcontractors, and investors. But it is not necessarily good news for a lot of routine assembly-line workers in Detroit, because there are not likely to be many of them left in Detroit, or anywhere else in America. (Reich 1992: 172)

Nationals of all countries are becoming members of an international labour market. The competitiveness of a country's workers is becoming less and less a function of the success of a local or national corporation or industry. More and more it depends on what functions these workers are performing - or, as Reich puts it, "the value they add" - within the new global economy. Thus

Australians, Britons, North Americans, Taiwanese, Colombians, Mexicans - indeed, "nationals at large" - confront "global competition ever more directly, unmediated by national institutions" (ibid). Hence, successes or failures will be far from even among citizens of any particular country. Those "whose contributions to the global economy are more highly valued in world markets will succeed, while others, whose contributions are deemed far less valuable, fail" (ibid. See also Hull 1992).

The fifth characteristic feature of the new capitalism is its dynamic and inseparable relationship with the current technological revolution - especially with the information-communications dimension of this revolution which, in addition to informatics, microelectronics and telecommunications, encompasses also scientific discoveries and applications in biotechnology, new materials, lasers, renewable energy, and the like (Castells 1993: 19). The dynamism of the relationship is such that demands generated by the kinds of economic and organisational changes already identified stimulate ongoing developments in information and communications technologies. These technologies (in their earlier manifestations), however, themselves provided many of the material conditions needed for the emergence of the global economy in the first place. Set in train, as they are, the dynamics continue apace, creating a situation where a crucial factor - if not the fundamental source - of wealth generation resides in the "ability to create new knowledge and apply it to every realm of human activity by means of enhanced technological and organizational procedures of information processing" (ibid: 20).

This account of the new capitalism is at most a *storyline*, distilled from a range of books and reports, in a manner similar to accounts provided elsewhere of the fast capitalist storyline, and with the same qualifications (see Gee and Lankshear 1995). Even so, this second storyline reveals a much more complex and analytic account of the new capitalism than we get from fast capitalist texts. One strength of the close attention paid by leading theorists to trends and theories gleaned from wide ranging research over the past 40 years is that a range of factors associated with success and failure within the new work order becomes apparent. Furthermore, as with the "old" capitalism, it is clear that growth and development within the new capitalism is uneven at all levels: from individual to individual, locality to locality, region to region, nation to nation, continent to continent.

Building on the kind of analytic approach evident in his overview of the five key features of the new capitalism, Castells argues that economic trends since the mid 1960s indicate four main factors which influence the economic success or regions and/or nations in terms of getting market share and advantage, and securing economic growth (1993: 21).

1. The technological capacity of the economy in question, and its conformity to the "logic" of information.

2. Degree of access and connectedness to a large, integrated, expanding market. The new world economy is dominated by three main trading blocs:

East Asia, the European Economic Area, and North America. These blocs provide a double advantage to their members: namely, access to a partially protected domestic market, plus potential access to very large markets.

3. Production activities where the costs at the site of production are much lower than prices in the markets of sale. Castells notes that the operation of this factor depends on the first two factors operating. That is, a producer or an economy must have rich markets available before the "value-added" strategy of the new capitalism can operate. Given access to such markets, the capacity to produce high quality goods efficiently comes into play.

4. The capacity of institutions at a national or supranational level to "steer" growth strategies for their countries or regions. Castells refers to Chalmers Johnson's account of "developmental states" having played a key role in shaping the direction and character of the world economy during recent decades - thereby securing advantage for their affiliated economies. Theory-driven large scale policy initiatives, such as Australia's "clever country" strategy, might be seen as an instance of the state trying to steer a national economy in the direction of successful participation and to secure access to an economic bloc (the "look to Asia" policy).

III Symbolic analysis, entrepreneurship, and "survival of the fittest": the hegemony of "value-adding deservers" and some likely legacies of born again individualism

This kind of analysis helps explain much of what we see going on around us. For example, the extent to which competition and labour markets have become global for many kinds of work and products explains the importance and urgency attached to industrial relations legislation aimed at making local labour "more competitive" with international labour sources and, in general, to fixing wages to productivity and getting more "flexibility" into conditions and duration of employment (more contract basis work, etc.). Likewise, the changing role of the state toward directing revenue toward steering growth strategies on behalf of capital and away from subsidising welfare provision and local employment schemes becomes transparent.

In *The Work of Nations* (1992: ch 14), Robert Reich argues that three broad categories of work are emerging across nations within the new world economy. He calls these "routine production services", "in-person services", and "symbolic-analytic services" respectively. Between them they will eventually account for almost all the paid work performed in modern economies. By Reich's analysis, in 1990 routine production work comprised around 25% of US jobs, in-person work some 30%, and symbolic-analytic work around 20%. While the percentages in the first two categories are continuing to grow, the proportion of symbolic-analytic workers in the US workforce has become more or less static.

Besides the repetitive blue collar activities of traditional mass production, routine production services include basic data entry tasks as well as many supervisory jobs performed by low and middle level managers - "foremen, line managers, clerical supervisors, section chiefs" - who "run repetitive checks on subordinates' work and [enforce] standard operating procedures" (ibid: 174). In-person service work is also largely made up of repetitive tasks, albeit "in direct contact with the ultimate beneficiaries of [the] work": e.g., the work of retail salespersons, hospitality workers, janitors, cashiers, drivers, secretaries, flight attendants, security guards (*ibid*: 176). Symbolic-analytic work involves services which are delivered in the forms of data, words, and oral and visual representations. It comprises diverse problem-identifying, problem-solving, and strategic brokering activities (Reich 1992: 177). According to Reich, symbolic analysts deal with problems by manipulating symbols: simplifying reality "into abstract images" and other symbolic forms. These forms can then be "rearranged, juggled, experimented with, communicated to other specialists, and then, eventually, transformed back into reality" (*ibid.*). These workers draw on a combination of experience and their facility with analytic tools which range from philosophical or legal arguments, to scientific principles, to algorithms, to gimmicks, to psychology-based ideas about how to amuse, and so on (ibid: 178). As such, symbolic-analytic services span the work of research scientists, all manner of engineers (from civil to sound), management consultants, investment bankers, systems analysts, authors, editors, art directors, video and film producers, musicians, and so on.

Unlike symbolic-analytic work, much of the work within the first two categories is not seen as substantial value-adding activity. Furthermore, to the extent that beyond demands for basic numeracy and the ability to read such work calls primarily for reliability, loyalty, the capacity to take direction and, in the case of in-person service workers, "a pleasant demeanour" (ibid), there is a vast potential labour pool which is now global. The logistics of labour supply and demand, in conjunction with the perceived low value-additive nature of this work, mean that such work is poorly rewarded relative to symbolic-analytic work.

Against this backdrop, Reich speaks of a rising one-fifth and a falling four-fifths within the new work order of economies like our own. By highlighting different categories and "realities" of work, which are either ignored or are at best glossed by most fast capitalist authors, more sophisticated accounts indicate a potential - and increasingly *actual* - problem of alarming depth and proportions for modern economies. Speaking about the US economy specifically, but acknowledging a much wider applicability, Reich says the problem is that

> while some Americans are adding substantial value, most are not. In consequence, the gap between those in the first group and everyone else is widening. To improve the economic position of the bottom four-fifths will require that the fortunate fifth share its wealth and invest in the wealth-creating capacities

> of other Americans. Yet as the top becomes ever more tightly linked to the global economy, it has less stake in the performance and potential of its less fortunate compatriots. Thus our emerging dilemma, and that of other nations as well. (ibid: 301)

The "lean and mean" "perfection" of "quality capitalism" requires a core of relatively well paid knowledge leaders and workers supplemented by a bevy of people "servicing" them for the least possible price so that their "ideas" can be translated into the highest quality, most competitive "products" possible. These "servants", whether in a "less developed" country or in "third world" pockets of "developed" countries, will "merit" their lowly places because of their lack of "knowledge" and "education", the new currency of the new capitalism. Of course, this is not a new problem that has somehow just come into being with the new capitalist economy and its work order. Rather, this was always the root problem of the "old" capitalism. Despite claims of enchantment and enhanced egalitarianism, a flattening of hierarchies and relationships that are more horizontal, what we find in the new capitalist world is a fracturing and restructuring of the elites, and not a just redistribution of opportunity and social goods. No doubt some new people are entering the elites, and some former elites fall, due to these restructuring processes. But we are faced with the prospect of the same moral and social problems operating in the new capitalism as operated in the old. Indeed, they may well become worse than we have known in recent decades, with a possible return to the deep divides and inequities of the early stages of industrial capitalism (Gee, Hull and Lankshear 1996: 47). Reich suggests that on the basis of recent and current trends, the futures of the best and worst off in economies like our own will continue to diverge to the extent that, unless appropriate interventions are enacted, by the year 2020 "the top fifth of American earners will account for more than 60 per cent of all the income earned by Americans; the bottom fifth 2 per cent" (ibid: 302).

What Reich forecasts for the US economy specifically holds more generally, and much more dramatically, when we take a still wider view. The kind of global perspective on the new capitalist work order taken by theorists like Castells (1993) and Fernando Henrique Cardoso (1993) looks beyond local and national levels to reveal an international division of labour characterised by vast inequalities - to the point of possible exclusion of entire national and continental economies from the new world economy.

The theory-driven, value-added, information-based global economy has ushered in an international division of labour reflecting primarily "the capacity to create new knowledge and apply it rapidly, via information processing and telecommunications, to a wide range of human activities in ever broadening space and time" (Carnoy et al 1993: 6). Castells argues that the notion of the Third World as an identifiable "entity" no longer exists. The fundamental features of the new work order, and the factors influencing success and failure, identified by Castells, have splintered Third World economies into four groups:

clear winners - viz., the Asian NICs (newly industrialised countries)
potential winners - e.g., Mexico (with access to NAFTA) and Brazil
China and India (with potentially vast markets and abundant high skilled/value-adding/symbolic-analytic "human capital")
the clear losers - "the Fourth World of marginal rural economies and sprawling urban peripheries" (many located within Africa and Latin America).

Cardoso argues that large parts of the "South" (as in the North-South divide - c.f., Brandt 1980) are becoming increasingly marginal - and potentially *irrelevant* - to the world economy. This has a lot to do with these countries starting a long way "behind" technologically, scientifically, and theoretically so far as the demands of the new capitalism are concerned. In some cases, especially in Latin America, it has to do with crippling foreign debts incurred since the 1960s. It has also to do with the discrepancy between the "open", "democratic" "institutional style that typifies the new capitalism - i.e., what the former Soviet bloc has been obliged to pursue, via perestroika and glasnost, since the mid 1980s - and the varying institutional styles of warlord, military dictatorship, fundamentalist theocratic, and otherwise "dysfunctional" ("democratically-speaking") sociopolitical formations. According to Cardoso (1993: 56)

> We are no longer talking about the South that was on the periphery of the capitalist core and was tied to it in a classical relationship of dependence ... We are dealing, in truth, with a crueler phenomenon: either the South (or a portion of it) enters the democratic-technological-scientific race, invests heavily in R & D, and endures the "information economy" metamorphosis, or it becomes unimportant, unexploited, and unexploitable ...
>
> [T]hose countries (or parts thereof) which are unable to repeat the revolution of the contemporary world, and at the same time find a niche in the international market, will end up in the "worst of all possible worlds." They will not even be considered worth the trouble of exploitation; they will become inconsequential, of no interest to the developing globalized economy.

V *Some implications for literacy*

I have tried to paint a picture of the new capitalism and its new work order which depicts a reality that is far from ideal. At the same time, this reality needs to be understood and negotiated in the present if individuals and groups are to transform it into something more inclusive, just, and downright viable. This has important implications for adult education and literacy work.

Bill Green (1988) has provided an account of literacy which is particularly useful here. He sees literacy as comprising three interrelated dimensions: namely, "operational", "cultural", and "critical". Green notes that while literacy theorists commonly identify operational (or functional), cultural, and critical variants of literacy, they typically present them as so many more or less self-contained "types" of literacy. He rejects this view, claiming instead that literacy must be framed to include competence on all three as *necessary interrelated dimensions* of becoming literate.

The *operational* dimension consists of becoming competent at handling "the written language system" (Green 1988: 160). According to Green, "[f]rom this perspective, it is a question of individuals being able to read and write in a range of contexts, in an appropriate and adequate manner".

The *cultural* dimension encompasses "competency with regard to the meaning system". In other words, we engage in literacy events and acts around *content* as well as within contexts; we are "never simply ... literate in and of itself but ... literate with regard to something, some aspect of knowledge or experience" (ibid). To become literate, then, presupposes coming to understand the values, orientations, interpretations, purposes, and the myriad other cultural *meanings* entailed in competent participation within the larger social practices in which one's literate practices are embedded .

The *critical* dimension of literacy has to do with the fact that meaning systems “are always selective and sectional; they represent particular interpretations and classifications” (Green 1988: 162). This is abundantly clear with respect to the values, purposes, interpretations, interests, and so on inherent in the new work order as the “way of doing economic life”. Indeed, the nature and implications of the new capitalism and its new work order give particular force to Green's view of the utmost significance of the critical dimension of literacy. According to Green:

> Unless individuals are also given access to the grounds for selection and the principles of interpretation [involved in the meaning systems into which they are drawn as participants by dint of being specific identitied social and cultural beings] they are merely socialised into the dominant meaning system and lack the capacity to take an active role in its transformation. It is in this sense that literacy ... can operate as a means of social control. Implicit in the most significant sense of literacy, there must be a critical dimension: one that enables the individual not simply to participate in the culture but also, in various ways, to transform and actively produce it. (Green 1988: 162-63)

The new work order is an “invitation” to participate in an economic culture dominated at the level of meaning by the organisation of life around competitive, flexible, innovative, adaptive practices of value-adding entrepreneurship built upon the ever increasing primacy of information as raw materials and as produced outcomes. It is also an invitation to participate in an economic culture in which rewards are increasingly polarised, and where control of material wealth is becoming increasingly concentrated at all levels, from individuals and corporations, to regions and entire nations. It is, therefore, a culture in which *merely socialised participation* puts many individuals and groups at grave risk.

How, then, might we begin to envisage contemporary forms of literacy *education* that encompass operational, cultural, and critical dimensions in ways that enhance our prospects of surviving the present as a basis for actively producing and transforming the culture we inhabit? Where can we find potential spaces for enacting three dimensional forms of literacy education? And how might we deploy those spaces to transcend merely socialised participation? I see the interface between "workplace literacy" and "new technologies" providing some interesting possibilities here.

Beynon's (1993: 21) claim that "the `competences' required to `read' technology are essential attributes of the well-educated, literate person of the 1990s" has, with the assistance of considerable "hype" (Green and Bigum 1996) from commercial, corporate, educational, and government sources, bitten deep into the popular consciousness, creating strong incentives for individuals and entire workforces to become "technologically literate". Green and Bigum (ibid), among others, see "technological literacy" as a problematic - indeed, mystifying - concept: one about which a good deal of problematising education needs to go on. It represents an excellent place from which to undertake a thoroughgoing literacy *education* taking in the operational, cultural, and critical dimensions of literacy. As Green and Bigum (1996: 200) note, all too often, "a kind of new-literacy determinism operates, linked ... to an impoverished sense of literacy which ignores the cultural and critical dimensions of a new technology and sees the task as giving individuals a kind of "clip-on" access to each new technology as it emerges into the market". That is, we become preoccupied with learning how to "drive it" - to that extent focusing solely "on the *operational* dimension" of the new literacy (ibid).

In addition to Green's construction of literacy as three dimensional, useful clues to how we might proceed doing educational work at the interface of workplace literacy and becoming literate about new technologies are provided in the ideas outlined earlier in this paper, as well as in Rob McCormack's important insight (McCormack 1991: 6) that adults with literacy problems "do not need something called literacy. They need an education". Of course, within the framework of this paper, it is clear that it is by no means only "illiterate adults" who need an education here but, rather, *all of us*.

Educative work at the interface of workplace education and new technologies will benefit from drawing upon each of the five literatures identified at the outset of my argument, as well as from some foundational insights into the relationship between literacy/ies and technology. These five literatures (or however many we may identify) will provide important "data" and variations in perspectives on matters that arise in considering the nature of work within the new work order, and the role and significance of computer mediated communications technologies (CMCs) within that work order. That is, they will provide necessary material for considering operational, cultural, and critical factors imbricated in CMC applications to contemporary work, and the consequences of this. They will also, of course, be crucial to getting a fix on cultural and critical dimensions of the very work processes, procedures, and values we are called upon to enact in our daily work routines - and the identities we are thereby coerced to assume: e.g., to become more entrepreneurial, to become more self-directed, to assume new responsibilities, to endure greater intensification, to be "eager to stay [in a job] but ready to go [when we are no longer needed]" (Carton 1994: 1; Gee and Lankshear 1995: 16), to see ourselves as necessarily in new contractual relations to employers, and so on.

Since I want in the space that remains to focus specifically on "new technology/technological literacy" aspects, let me simply point readers here to Glynda Hull's ethnography of self-directed work teams (Gee, Hull and Lankshear 1996: chapters 4 and 5) as an exemplary indication of how current workplace education initiatives may be critiqued, and how workplace literacy programs that build on each of the operational, cultural, and critical dimensions of literacy identified by Green might proceed. Indeed, our entire book, *The New Work Order*, provides an extended account of a sociocultural approach to literacy intended to speak at length to the very subject matter of this paper.

Picking up, instead, a more specifically "technological" focus, I would suggest that our literacy education programs must proceed from a basis of keeping "tool", "word", and "world" together throughout learning and teaching activities. The first point to note here is that since literacy has necessarily to do with *written* language, *all* literacies are, by definition, technologised - or "technological". "Literacy is best understood as associated with and arising out of particular relationships between language and technology", although hitherto technology has typically been seen as "at best an ancillary consideration in literacy studies and literacy work" (DEET Project Team 1996, forthcoming). Accounts are now beginning to emerge (e.g., Green, 1993; Green & Bigum, 1996) which clarify how literacy and technology are integrally related, and indicate that literacy "is necessarily defined in relation to available technologies" (DEET Project Team, forthcoming) - to the extent that "literacy itself might be usefully understood as, and in terms of, a fundamental relationship between language and technology." (ibid)

Since written language is always-already *technologised*, heightened sensitivity to technology may well help us enhance the quality and effectiveness of literate practice. In addition, the rapid current development of new technologies is impacting powerfully to change forms and practices of literacy (ibid), making it imperative that we attend to the notion of new and emerging literacies and the emerging new practices within which they are embedded, and the effects they have on human and environmental life. How might this proceed, given the larger concerns of this paper?

We may begin with some of the typical "facilities", "operations" and "types of information" associated with CMC technologies that ordinary people might encounter in the course of their everyday lives - particularly, on the job. Facilities might include stand alone computers, internally networked systems of computers (LANs and Intranets) - such as networked computers within an office or work unit, or within a language lab - and computers linked to the Internet (wide area networks, or WANs). Facilities might also be seen to include the gamut of softwares available: from word processing, data base, and spreadsheet softwares, to gamesware, email, Powerpoint, graphics software, mutimedia applications, hypertext mark up language, file transfer software (encompassing the capacity to zip and unzip files) and so on.

When it comes to "operations", these will range over such diverse facets as loading data into a data base, compiling spreadsheets, undertaking word processing, compiling graphs and tables, importing graphics, constructing and "reading" Web pages, transferring files, sending and receiving email messages, desktop publishing, and so on. From another angle, we might describe such operations as involving accessing information, processing information, analysing information, producing and transmitting information, formatting information, selling (literally, or in the sense of "hard sell") information, foisting information and demands for information onto people, making and keeping information secure, etc.

In the normal course of events, we typically focus on "learning how to do" these sorts of things, thereby privileging the operational dimension of literacy. Much inservicing and teaching activity goes into showing people how to do these things, and nothing more. Indeed, the predilection on the part of "computing experts" for keeping larger expertise to themselves, by withholding explanations, or by making their explanations unintelligible, is legion. The point is, however, that each and every one of such operations is inseparably linked to the production and proliferation of *cultural meanings*. This, of course, is not "meanings" in the everyday sense of linguistic and mentalistic meanings, but as lived and embodied meanings, that assume life as (and within) larger cultural practices, Discourses (Gee 1990, 1991, 1996), and as human identities that emerge and evolve around participation in precisely these sorts of operations. The person who spends hours keying information into a computer is not *just* a word processor or data inputter. S/he is a builder and maintainer of a raft of values, purposes, institutions, etc., and her or his identity is shaped to this extent. During the current period of rapid intensification of life generally, and work specifically, there is even less available headspace than previously for bringing to conscious awareness the processes involved here, and their consequences, possibilities, and limitations for human becoming.

To explore these aspects, to uncover previously unseen and "unthoughtabout" connections, and to locate one's activity and one's place within a larger scene of social practice is, precisely, to deal with the cultural dimension of the literacies in question. It is to ask what our acts *mean* in cultural terms; to investigate the cultures we are thereby implicated in. To some extent, it is in the interests of those who employ us that we have this kind of understanding - or, at least, some degree of it. That is, we have here a case of what is increasingly becoming a commonplace in learning theory and language and literacy theory: namely, that meta knowledge of one's practice enhances one's practice. If we are inputting data pertaining to quality control, we do a better job of this and may find better ways of doing it if we know in larger cultural terms what we are doing and what its significance is (c.f., Lankshear 1994). To put it another way, the capacity to innovate, for example, has a lot to do with meta level knowledge of the particular practice at hand. Hull provides a graphic illustration of how companies (and employees as well) lose when the focus on mere operation is taken too far. She describes how productivity falls when workers understand how to operate rules but do not have command of the purposes behind the rules and, hence, a sense of when it is appropriate to break or challenge them (Gee, Hull and Lankshear 1996: chapters 4 and 5). Beyond the instrumental considerations of greater value accruing to the employer as a result of our having a degree of cultural knowledge about our practices, the simple fact is that as employers (loyal servants, team members, etc.), we have *a right to know* what our activity means in terms of cultural practice and effects - especially to the extent that what we do has moral, economic, environmental, etc., consequences, and that were we apprised of these we might choose (as they have a moral right to do) not to do it, or to do something else.

When we add this cultural dimension of literacy to our pedagogical mix, the educational possibilities become immense. Just what *is* the data we input, where does it come from, and what might a range of its consequences be? How has the fact that information can be handled in this way and in these amounts changed the way work is now being done? And, again, with what consequences and implications? Or, to take James Gee's notion of Discourse (1990, 1991, 1996), what might we say about, say, Web Building as discursive practice? What sorts of purposes, values, goals, concepts, beliefs, aspirations, and the like are associated with the escalating trend for business, educational institutions, groups and individuals to have web sites? What implications for identity are in play here? To what extent do these implications resonate with larger logics of identity constitution, postmodern cultures, consumerism, and so on? And, to turn matters back more explicitly to considerations of language and literacy "competence", how do these features of the larger Discourse of Web Building shape what counts as a good or effective Web site, and thereby condition what counts as being a competent web site designer or builder?

Of course, the various "literatures" which address the new work order come into play here. Serious social science has a lot to tell us about new technologies and their impact on work. Policy statements like *Creative Nation* provide an angle on a range of "facilities" and "operations" in relation to building national identity. The typically celebratory tones evident in fast capitalist texts on the theme of new technological applications within work can be brought into conversation with some of their darker and more hidden implications as unveiled by Reich. These can in turn be brought into conversation with optimistic assessments in the tradition of Andre Gorz (1985) or, more recently, John Mathews (1989), and less sanguine appraisals by writers in the vein of Jacques Ellul (1964), David Noble (1977), Ursala Franklin (1990), C.A. Bowers (1988), among others. The inquiry, however, must go beyond mere appeals to textual sources. Powerful insights will come from investigating actual practices in the field, where workers may engage as workplace ethnographers of (their) new technology-mediated work practices in a manner analogous to that advocated by people like Shirley Heath (1983), Judith Green (Green and Yeager 1995), and Jay Lemke (1995) for student and peer investigations of literate practices within educational sites.

This kind of examination, of course, will carry matters well into the critical dimension. Bill Green's notion of a critical dimension in literacy which enables individuals not simply to participate in the culture, but to *actively* (i.e., wittingly) produce and transform the culture, implies that workplace education must enable workers to identify *which* meanings (values, interpretations, aspirations, beliefs, goals, ends, institutional forms, processes, etc.) have been selected in; meanings these are; which meanings have been effectively selected out (omitted), and whose meanings these are; what opportunities have been opened up and for whom, and which closed down, and for whom, by these selections; what constraints and thereby been imposed, by whom, and for whom?; what alternative possible futures seem likely to be precluded by the choices and selections enacted at present; what alternative projective futures could be envisaged; what changes to past selections would they require, and what kinds of practices - including practices mediated by new technologies - might be required to get these alternative futures on the agenda? These considerations might then be fed back into "praxical" investigations of the potential of, say, virtual communities for extending the bases of our information, understanding, knowledge and critique, and for translating these into enactive or projective practices aimed at pursuing alternative cultural practices and forms - beginning with alternative practices and forms of work culture.

VI Conclusion

Much more could be said here, and many specifics remain to be spelled out. Doing so goes beyond the scope of this paper, however, which has sought only to make a start to what is potentially an exciting and challenging future for literacy education at the interface with work under conditions of the new capitalism. The new work order is not set in stone. Its consequences and implications are historically contingent and, hence, open to challenge and change. The domain of post-compulsory education in general, and adult and workplace education more specifically, continues to provide one of the most promising sites for intervention in the quest for a more inclusive, democratic, and just future. This should be no surprise, since the work order of any age exerts a powerful - if not the most powerful - influence on the wider cultural possibilities of that age.

References

Best, M. (1990). *The New Competition: Institutions of Industrial Restructuring*. Cambridge, MA.: Harvard University Press.

Beynon, J. (1993). Technological literacy" Where do we go from here? *Journal of Information Technology for Teacher Education* 2, 1, pp. 7-36.

Block, F. (1990). *Postindustrial Possibilities*. Berkeley and Los Angeles: University of California Press.

Bowers, C.A. (1988). *The Cultural Dimension of Educational Computing: Understanding the Non-Neutrality ofTtechnology*. New York: Teachers College Press.

Boyett, J.H. and Conn, H.P. (1992). *Workplace 2000: The Revolution Shaping American Business*. New York: Plume.

Brandt, W./Independent Commission on International Development Issues (1980). *North-South: A Programme for Survival*. London: Pan Books.

Cardoso, F.H. (1993). North-South relations in the present context: A new dependency? In M. Carnoy, M. Castells, S. Cohen and F.M. Cardoso, *The New Global Economy in the Information Age: Reflections on Our Changing World*. University Park, PA.: Pennsylvania State University Press, Chapter 5.

Carnoy, M., Castells, M., Cohen, S. and Cardoso, F.M. (1993). *The New Global Economy in the Information Age: Reflections on Our Changing World*. University Park, PA.: Pennsylvania State University Press.

Carton, B. (1994). Students facing difficult job search. *Boston Globe* 246, 108, p. 1.

Castells, M. (1993). The informational economy and the new international division of labor, in Carnoy, M., Castells, M., Cohen, S. and Cardoso, F.M. (1993). *The New Global Economy in the Information Age: Reflections on Our Changing World*. University Park, PA.: Pennsylvania State University Press, Chapter 2.

Chen, E. (1985). *The Newly Industrializing Countries in Asia: Growth Experience and Prospects*. Hong Kong: University of Hong Kong, Center for Asian Studies.

Cohen, S. and Zysman, J. (1987). *Manufacturing Matters: The Myth of the Post-Industrial Economy*. New York: Basic Books.

DEET Project Team (1996 forthcoming). Literacy, technology and education: A project report. *Australian Journal of Language and Literacy* 19, 4. The project team comprises, Chris Bigum, Cal Durrant, Bill Green, Colin Lankshear, Wendy Morgan, Joy Murray, Ilana Snyder, and Martyn Wild.

Dosi, G. et al (1988). *Technical Change and Economic Theory*. London: Pinter.

Drucker, P. (1993). *Post-Capitalist Society*. New York: Harper.

Ellul, J. (1964). *The Technological Society*. New York: Knopf.

Franklin, U. (1990). *The Real World of Technology*. Montreal: CBC Enterprises. 1990.

Gee, J. (1990). *Sociolinguistics and Literacies: Ideology in Discourse*. London: The Falmer Press.

Gee, J. (1991). What is literacy? In C. Mitchell and K. Weiler (eds) *Rewriting Literacy: Culture and the Discourse of the Other*. New York: Bergin and Garvey.

Gee, J. (1994). New alignments and old literacies: Critical literacy, postmodernism, and fast capitalism. In P. O'Connor (ed.), *Thinking Work Vol 1: Theoretical Perspectives on Workers' Literacies*. Sydney: ALBSAC.

Gee, J. (1996). *Sociolinguistics and Literacies: Ideology in Discourse*. London: Taylor & Francis. 2nd Edition.

Gee, J. and Lankshear, C. (1995). The new work order: Critical language awareness and "fast capitalist" texts. *Discourse* 16, 1, pp. 5-19.

Gee, J., Hull, G. And Lankshear, C. (1996). *The New Work Order: Behind the Language of the New Capitalism*. Sydney and Boulder, CO: Allen and Unwin and Westview Press.

Gorz, A. (1985). *Paths to Paradise: On the Liberation from Work*. London: Pluto Press.

Green, B. (1988). Subject-specific literacy and school learning: A focus on writing. *Australian Journal of Education* 32, 2, pp. 156-79.

Green, B. (1993). Curriculum, technology, textual practice: Images and issues. In B. Green (ed), *Curriculum, Technology and Textual Practice*. Geelong: Deakin University Press.

Green, B. and Bigum, C. (1996). Hypermedia or media hype?: New technologies and the future of literacy education. In M. Anstey and G. Bull (eds) *The Literacy Lexicon*. Sydney: Prentice Hall, pp. 193-206.

Green, J. And Yeager, B. (1995). Constructing literate communities: Language and inquiry in bilingual classrooms. In J. Murray (compiler) Celebrating Difference, Confronting Literacies. Proceedings of the Australian Reading Association 21 National Conference. Sydney: ARA, pp. 97-111.

Guile, B. and Brooks, H. eds. (1987). *Technology and Global Industry: Companies and Nations in the World Economy*. Washington, DC.: National Academy Press.

Hammer, M. & Champy, J. (1993). *Reengineering the Corporation: A Manifesto for Business Revolution*. New York: Harper Business.

Heath, S. B. (1983). *Ways with Words: Language, Life, and Work in Communities and Classrooms*. Cambridge: Cambridge University Press.

Hull, G. (1992). *Their Chances? Slim and None: An Ethnographic Account of the Experiences of Low-Income People of Color in a Vocational Program and at Work*. Berkeley: National Center for Research in Vocational Education.

Kanter, R. (1983). *The Change Masters: Innovation for Productivity in American Corporations*. New York: Simon and Schuster.

Lankshear, C. (1994). Literacy and empowerment: Discourse, power, critique. *New Zealand Journal of Educational Studies* 29, 1, pp. 59-72.

Lemke, J. (1995). Research Proposal. QUT Visiting Research Fellowship Scheme. Brisbane: QUT Office of Research and School of Language and Literacy Education.

Levett, A. and Lankshear, C. (1994). Literacies, workplaces and the demands of new times. In M. Brown (ed.), *Literacies and the Workplace: A Collection of Original Essays*. Geelong: Deakin University Press.

Mathews, J. (1989). *Tools of Change: New Technologies and the Democratisation of Work*. Sydney: Pluto Press.

McCormack, R. (1991). Framing the field: Adult literacies and the future. In F.Christie et al, *Teaching Critical Social Literacy: A Project of National Significance on the Preservice Preparation of Teachers for Teaching Literacy*, Vol. 2. Darwin: Northern Territory University. Centre for Studies of Language in Education and the Department of Employment, Education and Training.

Noble, D. (1977). *America by Design: Technology and the Rise of Corporate Capitalism*. New York: Knopf.

Peters, T. (1992). *Liberation Management: Necessary Disorganization for the Nanosecond Nineties*. New York: Fawcett.

Piore, M. and Sabel, C. (1984). *The Second Industrial Divide: Possibilities for Prosperity*. New York: Basic Books.

Reich, R. (1992). *The Work of Nations*. New York: Vintage.

Thurow, L. (1992). *Head to Head: The Coming Economic Battle among Japan, Europe and America*. New York: Morrow.

Vogel, E. (1979). *Japan as Number One: Lessons for America*. Cambridge, MA.: Harvard University Press.

Assessing Front-line Management the Identification of Personal Constructs in the Workplace

Irena Morgan-Williams

The Economics and Politics of Learning

The training and education of adults in the community, as part of the unemployed sector, returning to tertiary or secondary or vocational education, or in the workplace, is a priority to both government and private enterprise. Essentially, the premise is that a skilled workforce equates to a productive country, or further, that a country of learners will provide the innovation and creativity required to dramatically improve the economy. *"Employers in modern workplaces therefore need to decentralize their learning systems so as to push their human resource development activity as close as possible to the point of production and service delivery* (Carnevale & others, 1990) " (NSDC; 1995; 4) which requires that more intensive research be undertaken as to how to best achieve that approach . One of the results of current research has been the recognition that *"Applied learning works better than learning in traditional classroom formats because it delivers new knowledge in a context meaningful to the learner and can be put to immediate use through natural applied learning methods* (Carnevale & others, 1990). In order to achieve this position an analysis of current training and education practice would provide a view of past successes and future practice.

Research and analysis would aim to discover the effective and efficient methods of delivering "learning" situations within the work hours.

Learning - The Background

In essence 'how does a person learn (specifically) on the job?' Is there a difference in the way s/he operates or in the selection of strategies, which is differs markedly from the workplace as against a social context? When examining then the questions of "how does one learn?" the further question is 'what constitutes learning and what does not?" In fact, is it that premise that if there is a perceptible cognitive change - "dawning comprehension" - or is it that there is a longitudinal change in personal practice, that designates "having learned". In fact, what is learned may not be utilized at the time but be of importance at a later time; is the learning part of an on-going developmental process so scarcely noticeable except in hindsight; is it an immediate change to practice that then translates to attitudinal change and finally becomes a habit.

An integral part of learning is that it is the individual who controls what is and is not learnt. In this sense it is the learner who accepts actively the new or revised information to reconstruct current knowledge, attitudes and interpretations. While a facilitator or a context may provide the "information" be it specific or cultural, the effect of this provision is tempered by the acceptance of the learner. Why is it that you can have two people witness the same act yet glean from that act entirely different, even opposing, ideas/images or information. Each individual places an interpretation on all events that is a demonstration of their personal construct of the world. Each is unique, therefore, each can view, learn and change practice according - not to the information presented - but to the constructs through which they interpret the world. This "individualized interpretative" theory was comprehensively explored by George Kelly whose "*...Personal Construct Theory ...is essentially an idiographic and phenomenological approach to personality.. {as} ...it emphasizes the uniqueness of each individual and seeks to understand the person by looking at her or his experience of the world and way of seeing it. The model of Kelly's theory is the 'personal scientist'*" (Shackleton: 1984: 59)

The objective is to qualify the ways that the individual operates in the world, to be able to describe this modus operandi to develop a 'predictable' model of reacting and acting in the world. In one sense the word 'predictable' does not imply a 'control' but rather a method of understanding 'what it is that is done'. As described so aptly by Kelly *"Man looks at his world through transparent patterns or templates which he creates and then attempts to fit over the realities of which the world is composed.."* (Kelly;1930;8) so the task is to provide accurate descriptions of these types of templates or patterns of learning.

Yet, really one needs to take a couple of steps back to view the layers of learning that develop the "personal scientist', the common or generic steps that are required for a "learning" to take place. In this, Gagne' delivers a comprehensive exploration of the 'chains' of learning , the patterns of relating ideas or objects or actions as stepping stones towards concepts or enabling conceptual leaps that can be deemed 'learning'.That the change in attitude or behavior is the indicator of new learning. Thus he explains that "*A learning event, then, takes place when the* ***stimulus situation*** *affects the learner in such a way that his* ***performance*** *changes from the time before being in that situation to a time* ***after*** *being in it. The* ***change in performance*** is what leads to the conclusion that learning has occurred." (Gagne: 1973 : 5)

In that sense the individual garners a 'storehouse' of information which can be used immediately or when required be utilized to 'add' to the bank of experience and knowledge and attitude that **collate** the individual.

Development of the "Storehouse"

The 'storehouse' is a series of multiple spirals which provide layers of knowledge with networks or webs of connecting 'commonalties' . In this way while certain lines of information are generic , to suit a particular grasp of new knowledge requires a different 'twist' of the web. Along these webs run signals to indicate where the divergence is needed to add on or create new storehouses so that all information that has been ingested via the senses, memories and intellect can be intricately yet separately linked. Thus *"Life is characterized ... along a time line.. by the capacity of the living thing to represent its environment ... especially is this true of man, who builds construction systems through which to view the real world ..... though they may be biased in their representation ... both nature and human nature are phenomenologically existent."* (Kelly: 1963 : 43)

Supported by and supporting an infrastructure that decodes and deciphers the "real world" as perceived by the individual's particular "lens", are the accepted roles, rules and responsibilities of the individual within a specific social and cultural context. These written and unwritten codes of social behavior contain not only current experience, but also the shared human knowledge and ancestral background necessary for that individual to function in this society. In countless ways the individual is instructed to select information pertinent to her/his social role, cultural rule and social responsibilities. Often this is simply part of growing up in a particular society and culture that requires the development of particular skills or knowledge that would be deemed irrelevant or mandatory in other circles.

The interest in the "common" knowledge is that parameters can be drawn in order to test out or challenge ways in which people learn, remember and adapt to their surroundings, circumstances and changing needs. Langman's explanation that ."..*social life as everyday routines includes implicit assumptions and interpretations, what can be called stocks of knowledge that guide actions and plans for further actions* .. " (Wexley: 1991: 179) supports the concept of "storehouses" and extends this to the "predictability factor."

The idea of "common" knowledge, attitude, thought and action stems from the belief that all human beings are essentially similar with a myriad of differences that still do not outweigh their commonality. Thus, people can plan around the similarities of the human being to develop social and cultural systems that are of benefit to this creature. The common knowledge then allows a certainty of predictability to emerge as .." *without some predictability based on shared meanings and interpretations so that certain outcomes are likely, social life could not take place and structures be reproduced* .. " (Wexley: 1991 : 179)

If one could find the strategies that enabled an "artificial" development of common or predictable behavior while encouraging individuality and the fully conscious voluntary action to enact this common idea/issue/action then this could be both a dangerous and empowering tool. Controls such as developed by powerful individuals that swayed whole peoples (Hitler, Suharto, Mandela, Ghandi) are not the object of this paper rather the personal controls used by individuals to self-select in which direction they would be influenced or the unconscious selection that occurs which moves individuals in specific directions.

What is the motivation behind the operator who presents a surly face to the manager yet is the safety officer in the factory? Why does the manager become tongue-tied in the presence of colleagues from other companies at the meeting, yet has an enviable rapport with all staff in his office and plant? Not all can be explained away in " s/he does not have the language, literacy or numeracy skills" or " s/he needs to develop practice in these extended areas of her/his job" or " s/he's just like that".

The aim of this paper is to examine the possible factors behind the consistent differences in behavior of individuals and to propose a method of charting, describing and then developing learning strategies that are common for all.

Discourses - the workplace

The storehouse of knowledge, attitude and intellect is expressed in a myriad of methods - speaking, listening, body language, non-verbal stance, shift, posture ... are to name but a few - and yet it is the skills and the skill with which the individual adapts and modifies the discourse to suit the situation and react or act in a given situation that enables her or his "place" in that group to be ratified.

One finds a common "place" in the workplace is the 'them & us' situation and while it is much maligned there is a 'comfort' in being one of the 'them & us". In fact, whole ways of operating (i.e. communicating) are found within the status of a designated 'place'. The boss who steps over the line to be too familiar with the operators instead of the avuncular approach expected by them, will get less respect and response from the employees than a boss who fulfills the 'place' designated for him or her by the operators. One of the changes in current industry practice is to dissolve the parameters of these 'places' and develop a more collaborative approach to work. This, however, will require not simply change in policy and procedures but a change in the way each person operates - the discourses that she/he must now learn in order to operate with confidence and be respected in that 'place'. The discourses that she/he needs to acquire move far beyond the 'right thing to say' but needs to be imbued into their very mannerisms , posture , slight gestures, choice of lunch area , topic of conversation, eye-contact, physical nearness and tone of voice. The storehouse of each individual needs to be re-aligned to accept this new approach and ingest it, ensure that it permeates the whole system and thereby changes all currently makes up that individual.

An examination of *"the theory of discourse can help us understand ..... how people's social identities are fashioned and altered over time ...(that) under conditions of inequality, social groups in the sense of collective agents are formed and unformed , ... how the cultural hegemony of dominant groups in society is secured and contested ...(and) shed light on the prospects of emancipatory social change and political practice.."* (Wexley; 1991;99). This description of evolving skills in discourses within the circumstances of social, cultural and workplace contexts provides a picture of the "kaleidoscope" of the changing individual.

As one looks at the individual's opportunity, need and ability to access a range of discourses that would enable a change to occur or provide the means by which the individual can "learn" to develop these discourses, these then become part of the fabric of that individual. Attitudinal change, conceptual understanding, and changed perspectives are 'outcomes' for training and education programs and each needs to address the discourses of the individual within that 'kaleidoscope' for any change to occur. It is by addressing these that the uniqueness of each person can be ascertained and that *"people's social identities (which) are complexes of meanings, networks of interpretation* "(Wexley; 1991;99) are augmented rather than 'squeezed into some pre-ordained box of labels'.

These are some of the approaches that have worked in major government policies. The policy to ensure all people wear seat belts, the 'drink driving' policy and the "Sunsmart" concepts were successful because the government utilized a range of approaches that provided a many-pronged change to each individual. The visual images of beer or wine have been replaced with "dumb drink driver" ads, no overt advertising for alcohol is permitted, a focus on "guilt" if drinking or not wearing sunscreen, the graphic reminders of the legacies of both...... are some of the strategies utilized. And yet, no such overt advertising has been used against smoking, a more "reminder" system is used so that whenever someone picks up a cigarette packet and the eyes scan the print, the trademark name is synonymous with the warning!

Government targets the individual but works on national policies on a national scale, it then follows that if these strategies have been successful , companies can utilise these in their workplace reform. The focus then needs to be on the individual while developing national consensus on ways of operating in industry and in business. Many exponents of the Total Quality Management system or Quality Assurance, have found that the enterprises with the **least success** in implementing quality systems or making productive, positive changes to the workplace have been those where the quality system has been **imposed** rather than **imbued.**

A company that ensures the individual is valued, her/his input demonstrably listened to and acted upon is one where the quality system has been able to become part of the natural flow of the organisation. this view is reinforced by writers such as Saville who state that "*(I)individual workers must be committed to quality. The people at the workface are the ones that have the greatest capacity to improve quality...It is at this level that the initial changes to quality must occur...* " (Saville: 1990: 246)

In fact what is being asked of the individual is a change of attitude, a new way of operating that transforms the outcome of her/his work. This type of transformation aims not only to change behavior at a superficial and subconscious level but also increases the knowledge base of the individual within a group and within the larger organisation - local to global conceptual understanding. Habermas records " *how it is that certain transformations of* *attitude towards elements of domains constituted in different attitudes can be fruitful for the production of knowledge..* " (Habermas; 1985; 183) Simple processes of providing information and expecting individuals to react to these or accept these is not the case of how one learns. The knowledge must become part of the fabric of the individual's way of operating.

When examining how to implement changes in the workplace one needs to establish in fact what the current discourses are - as an enterprise and individually, the varying degrees of comfort in them - by both groups, and the 'new' discourses required by the individual and the group/company , the 'new' relationships that must now be made in order to operate successfully in the workplace. The use of training programs delivered as specific for an enterprise or across industry have been developed to make these changes as well as provide the content level and depth required of that industry. These programs have been driven by "outcomes" or the demonstration of "results" rather than simply "qualification" papers. *"Training is effective when there are clearly-defined objectives reached through programs geared to meet the needs of individual workers....Organisations should treat employees as an important resource...an extremely valuable asset....developed to its maximum potential.."* (Saville: 1990: 111)

The development of possible strategies for use in training programs which effectively address the needs of both the individual and the enterprise, requires questions about learning processes to be answered, the premises to be described and the platform to be established from which to develop the research methodology.

Research Questions

An examination of the workplace and those within requires a **platform of premises**. The methodology, the "possible' results or outcomes, the "possible" changes that would ensue from such research rather than being simply an academic exercise. In a nutshell what is being sought?

How do people learn?

How do people learn - in the workplace?
at home?

Is there a difference?

What is it if there is?
What is the major common thread?
How do we know someone is learning?

What assessment instruments do we have to test before and after learning?

BEST COPY AVAILABLE

These questions provide a focus for the development of the platform and Salmon states succinctly the "view" for this research perspective. " Much of our living is acted and felt in completely coherent ways without any explicit awareness on our part"
(Salmon; 1980; 67) so that to examine and evaluate the learning process *" (W)we will need to develop an understanding of psychological inquiry which will allow and encourage us to 'live in and amongst' rather than 'stand over and against' and become closely and intimately involved rather than remaining separate and superior observers."* (Salmon; 1980; 68)

Each individual has a unique constantly resolving blueprint of self, which operates within a socially, culturally dominant context that has "the power to establish the 'common sense' or 'doxa' of society, the fund of self-evident descriptions of social reality that normally goes without saying .."(Wexley; 1991;100), that determines the ways in which s/he interacts with the world.

Research Focus

Historical to Present Day

The auditing of current skill levels of individuals and the ways of improving or enhancing those skills to ensure efficiency and effective production in the workplace, has been the focus of government policies through a variety of initiatives. *The Finn Report, the Mayer Competencies* and the establishment of *ANTA(the Australian National Training Authority)* have all arisen from the growing awareness that there are certain generic skills that are integral to vocational, cultural, social and employment spheres. It is in the attainment then assessment of these skills in the workplace that a plethora of recognised, un-recognised, accredited and non-accredited courses have emerged.

These courses have been developed generally from two foci - large, public and institutionalized education and training practice; and, small, private and flexible "training-outcome" and "education-outcome" driven. The immediacy of the private access is often outweighed by the weighting given to the name to the public institution in terms of further education. Yet the focus is more on assessing what it is these organisations have to offer the "customer", as increasingly students are being called, rather than following that which is currently on offer as deemed appropriate by the institution. This shift in perspective, encouraged by industry and business, has caused educational organisations to re-examine what it is they actually do and how well they implement their "customer-focus" in a variety of contexts.

It is in this climate that the workplace is being pro-actively encouraged to provide or encourage training and education, either on-site or at a suitable

BEST COPY AVAILABLE

venue, that addresses the current skills of employees as well as ascertaining whether they fulfil the skills described by the Finn and Mayer recommendations as those that would provide a quality approach to the workplace. " *The lack of commitment to building in quality is the major reason for Australia's poor reputation in many areas of manufacturing. Most manufacturers, when stuck with the problems that poor quality causes, increase inspection rather than attempt to implement more fundamental change.."* (Saville: 1990:245) The fact that while training is not a tangible product as a steel pipe might be, it is still a product that enterprise needs to "buy" to ensure a seat on the 'cutting-edge' of change in technology and global marketing in the workplace.

"Staff training and development is an economic activity of vital importance to the well-being of any nation......... considerable attention is given to the quality of the human resource. ......in the skills with which workers do their jobs, is reduced accident rates, a lower level of spoilage, and a better finished product." (Saville: 1990: 105)
The 'productivity' gains are usually anecdotal and related to a "growing awareness" that the improvement in workplace behaviour and attitude tangibly results in better products and the reduction of incidences of waste or accident.

If the strategies for developing those 'improvements' were accessible and appropriate for all workers irrespective of their 'blueprint' then these could be incorporated into all training programs thereby providing both the worker and the industry with an assurance of the required change.

Outcomes

The **aim** of this research is to :

. establish a method of identifying "personal constructs"
. apply this knowledge to training and education needs in the workplace
. assess the relationship between the original "personal construct" and
the present development
. describe the processes utilized by participant to adjust the "personal construct" to suit the new environment
.assess the incorporation of the change into the 'blueprint' of the
individual

The **products** of this research would be:

. a chart to assess individual blueprints
. a description of possible results from the chart
. an alignment of the results with practical strategies for incorporation
into training programs

The **methodology** of this research originates from the work of G.Kelly(A Theory of Personality) whose description of his theory is that *"the psychology of personal constructs is not so much a theory **about** man as it is a theory of man"* (Kelly; 1963;183).

The core of this research method comprises two parts:

1. the question stance
2. the grid

1. the question stance

The premises supporting the platform of the "question stance" can be briefly described using statements from leading theorists as follows:

. *"... the proper way to study human affairs is not to examine the causes or to measure the incidence of behaviour but rather to interpret the meanings of social actions from the point of view of the agents performing them.."* (Windschuttle; 1994; 205)

- the **depth and breadth** of the research is dependent on the individual
- the framework of the research is to **channel the individual world view** in order to align or describe it

. *"...The concepts of Carl Rogers' non-directive therapy have influenced practitioners in this field and the counselling process is seen as one in which the clients are helped to make their own decisions.."* (Shackleton;?;141)

- **the choices** and descriptions are created and acted upon by the **individual**
- the researcher offers an **open question**

. "..the initial capabilities of the learner play an important part in determining the conditions required for subsequent learning.." (Gagne; ?;23)

- the framework expands to the breadth or narrowness of the **individual's current world view**

. *"By describing the different ways in which we can experience, or understand, the world around us, we are characterising the world as it appears to us, which is tantamount to characterising **the collective mind**, encompassing the different ways in which we are capable of making sense of the world.."* (Marton;1992;11)

- **common approaches** or the extent to which the differences can be grouped can be determined by the framework
- a chart of idiosyncrasies can be established to define the **individual blueprint**

. *" ...behaviour is basically anticipatory rather than reactive. The way we anticipate or predict the future is by developing a whole system of constructs, which are bipolar categorisations of similarities and differences perceived in the environment.*"(Shackleton; 1984;59)

- the framework encourages the explicitness of the **anticipatory "storehouse"** - each person has a range of reactions derived from the **"storehouse"**

2. the grid

a. the "grid" for the research is that developed by G.Kelly to determine the 'personal construct' of individuals by encouraging and supporting their control of the research assessment. The theory is *"more comprehensible when one looks at the assessment device...This is the repertory grid, one of the most widely used psychological investigative techniques o...."* (Shackleton; 1984 ;60)f recent years

- the grid provides a **restriction and a contrast factor** that demands a decision from the individual
- the **choices** made by the individual over the course of developing one grid can **describe the personal construct** used
- the development of six or more grids can encapsulate the major **'world views' of the individual**. "Various *forms of analysis , ranging from very simple methods through to factor analysis can be applied to the grid.... and analysis throws up the fact that most people are really only using 3 to 6 main constructs.*"(Shackleton; 1984 ; 61)

b. the elements of the grid and the constructs relationship is provided both by Shackleton's example and Figure 1:

> " a person is asked to name the most important figures in his or her life - father, mother, spouse, boss....- and is then presented with three of these, the names being written on separate cards and asked ,'In what way are two of these alike and different from the third?' The person might say,"Well, my father and my boss are both assertive and my best friend of the opposite sex is fairly docile.' That - assertive/docile - is the first construct and would then be applied to all the remaining figures.....by arranging all of the names of the people construed - known as the elements - along the top of a piece of paper and the constructs down the side, you end up with a grid..."(Shackleton;?;60)

Figure 1 Personal Construct Grid

Elements Construct	**parent**	**sibling**	**friend**	**colleague**	**boss**
1 docile/ aggressive	aggressive	aggressive	docile		
2 calm/ excited		excited	calm	calm	
3 risktaker/ controller			risktaker	risktaker	controller

The aim of the use of the grid in the workplace is to describe and determine the way in which the trainer/educator can devise programs to suit the "personal construct" of that individual. The premise being that if the teaching/learning cycle "fits" the world-view of the individual then effective learning would be more likely to occur.

This information enables the program to be customised in terms of the teaching strategies utilised as well as the types of assessment approaches used to most efficiently and effectively enhance the learning phase of each person.

Conclusion

In fact what has been grasped ? That each person is unique - yes; that each looks differently upon the world and so too does the world look differently upon that person; yet it is more. The recognition of the 'storehouse' and the ways in which that individual operates in the world can provide methods of teaching and learning that could be both generic yet individualized.

Bibliography

Barnes, Douglas., (1976) Penguin Books, " From Communication to Curriculum"

Berkel, Casey., (1996) NCVER Conference, " Assessment" National Industrial Office AMWU

Bernstein, Richard J., (1985) "Habermas & Modernity" Polity Press, Cambridge

Candy, P.C., 16(3) 1-11 (1989) "Alternative paradigms in educational research" Australian Educational Research

Callaway, Helen., (1981) International Council, Canada, "Women's Perspectives : research as re-vision" Convergence vol XIV No 4

Darrah, Charles., (1995)"Complicating the Concept of skill requirements" QUT Publication

Eisner, E.W., (1991) "Validity in educational critical theory" Chapter 6: The Enlightened Eye" New York: Macmillan

Firth, Raymond., (1970) "Human Types" Sphere Books Ltd.,

Gagne, Robert M. (1973) "The Conditions of Learning" Holt Rinehardt & Winston, Great Britain

Gonczi, A. (1993) "Developing a Competent Workforce" NCVER, South Australia

Gowen, S. & **Barlett**, C (1995) "Friends in the kitchen: Lessons from survivors of domestic violence", QUT publications(in press)

Greene, J.C., (1989) "Towards a conceptual framework for mixed method evaluation designs" Educational evaluation and Policy analysis Vol 11, No 3 p 255-274

Howe, K.R., (1986) "Against the quantitative-qualitative incompatibility thesis" Educational Researcher17 (8) 10-16

Illich, Ivan., (1975) , "Deschooling Society" Penguin Books

Keavney, Jack., (1984), "Private Enterprise: the winning way" Enterprise Australia

Kelley, Fiona., (1996) "Case Management : towards an integrated service strategy" National Conference on Unemployment, QUT

Kelly, George A., (1963) "A Theory of Personality" The Norton Library, New York

Knight, K., (1995) "Theory & discourse in research: implications for supervision of research students in the social sciences" QUT staff development presentation

Kvale, S., (1989) "Issues of validity in quantitative research" Sweden:Chartwell

Lancy, D.F., (1993) "Qualitative research in education: an introduction to the major traditions" Longman New York

Lawlor, Kaye., (1996), "Front-line Supervisor Development" NCVER Conference Western Australia, paper

Liberation Theology, (1976) ABC, NSW, " O Freedom O freedom"

Lidstone, John., (1996) "Ontology, epistemology & research design" - unpublished manuscript QUT, Brisbane

Literacy Update, May 1996., "New Ministers for Education & Training"

Luck, Christine., (1996) , " Fishing in the applicant pool"
3rd National Conference on Unemployment, Legal Aid Office

Marton, Ference, (1992) "Phenomenography" Unpublished manuscript. University of Gothenburg, Sweden

Mishler, Elliot.,(1988) " Validation in inquiry-guided research: the role of exemplars in narrative studies." Harvard Educational Journal Vol 60

O'Connor, Peter., (1988) "Understanding Jung"
Mandarin Australia

Polkinghorne, D.E.,(1989) "Issues of validity in qualitative research"
Sweden: Chartwell

Quirk, Robert, (1994,) "Professional Curriculum Design" NSW TAFE Commission

Salmon, Phillida, (1980) " Coming to Know" Routledge & Kegan Paul British Library

Samuelson, Michael., (1987) "Supervision in Australia"
John Wiley & Sons, Jacaranda

Saville J & Higgins M, (1990) "Supervision in Australia"
Macmillan Education Australia

Shackleton, V & **Fletcher**,C (1984) "Individual Differences: theories and applications" Metheun London, Wales, M.L., Deakin Uni "Programme Evaluation" English in the workplace

Wexley, Phillip., (1991), "Critical Theory Now" The Falmer Press , London New York Philadelphia

Wheelwright, E.L., (1977) "Political Economy of Development" ABC, NSW

THE ROLE OF VOLUNTEER TUTORS IN THE HISTORY OF ADULT LITERACY IN QUEENSLAND

Jean Searle

Abstract

Volunteer tutors were crucial to the early development of adult literacy programs in Queensland. These community based programs were characterised by conservative and humanistic ideologies reflected in the use of medical or biological metaphors. However the role of volunteer tutors has subsequently been shaped by the politicisation of literacy, firstly through the social justice agenda and more recently by literacy being perceived as a competence or vocational skill. This paper begins by briefly describing, some early volunteer tutor programs, using excerpts from oral histories, before tracing how ideologies and discourses have affected pedagogy, tutor training and the role of volunteer tutors in the early years and more recent times in Queensland.

Background

During the Second World War, the Army Education staff had provided a number of short courses for 'illiterate and near illiterate' recruits (Dymock, 1993a), however despite the Duncan Report (1944) suggesting that similar problems might exist in the broader community, officially there was no illiteracy in Australia. Nevertheless, in the 1950's, remedial classes in reading and mathematics were conducted in TAFE colleges in New South Wales and these led to the first adult literacy evening classes, run in conjunction with the Adult Migrant Education Service in 1971-72 (Falkenmire, 1976:35; Dymock, 1993b). In 1972 Paulo Freire visited Australia to attend a World Council of Churches seminar in Melbourne and his philosophy had a profound impact on individuals who were working with community groups, particularly in Victoria. They had already identified a need but enthused by Freire's ideology of empowerment through literacy, an adult literacy program was established in 1973 by the Council of Adult Education, Victoria. Adult literacy programs in Tasmania also commenced in 1973 and were co-ordinated from the Division of Adult Education, Education Department. Pearse (1976) noted that the first adult literacy programs in both Western Australia and the Northern Territory were for adult Aborigines and are thought to have commenced in 1974. Programs in South Australia and the ACT began in 1976 (Dymock, 1982). Alongside the development of adult literacy provision in New South Wales and Victoria was the emergence of State Councils to act as political lobby groups promoting adult literacy. Initially members of these councils were also members of the Australian Association of Adult Education (AAAE), however in 1976 a working party of AAAE recommended the establishment of a separate organisation for adult literacy - the Australian Council for Adult Literacy (ACAL) - which held its first national conference in 1977.

It is against this background that the role of volunteer tutors in the history of adult literacy in Queensland will be discussed. A brief exposition on the need for volunteers, will be followed by a section in which the formative years of adult literacy in Queensland will be examined through firstly, three case studies and secondly through an analysis of the impact of ideology on pedagogy, policy and programs. This will be followed by a similar exposition of ideologies impacting on programs in the contemporary scene. Finally a number of issues will be discussed.

Need for volunteer tutors

To understand the role of volunteer tutors, it is important to recognise the vulnerability of many adults who seek adult literacy instruction. Many have experienced failure at school and are reluctant to re-enter formal educational institutions. They also fear exposing themselves and their perceived inadequacies to others, whether sympathetic teachers or other students in a class.

> *For the most part, the students' adult experiences tend to reinforce the feelings of inferiority which they had when at school. This may be one reason why many are reluctant to attend literacy classes, as they feel there may be a repetition of school. (Searle, 1984:19)*

Volunteer tutors therefore play an important role in assisting students to overcome initial barriers to learning through the use of more personalised, non-competitive approaches, in a non-threatening environment (Jones & Charnley, 1979; Dymock, 1984; Searle, 1985). This may be the student's own home, a library, neighbourhood centre, church hall, council building or TAFE college. The importance of the volunteer lies in their acceptance of the individual student, their empathy and support in building self-confidence. They are often able to provide the time, informality and flexibility which is not always available in more formal classes.

> *Thus it appears that individual tuition, in which the particular motivation of the individual student is considered when planning lessons and choosing materials, and the knowledge that one person is concerned about them and their problem, results in a more positive response. (Searle, 1984:52)*

One to one tuition then, is based on the premises that adults have an individual set of educational and life experiences, so optimal learning will occur if the program is based on their individual needs and interests (White, 1978; Grant, 1985).

The formative years of adult literacy in Queensland

The first volunteer tutors began working in Queensland in the early 1970's. Several people working within the school sector recognised that there were children with learning problems in their classes who required specialist help. Others were parents of children who had such problems. It was the parents of some of these children, who felt they were being ignored by the Department of Education, who decided to form their own association, SPELD (Specific Learning Difficulties), in Queensland in 1968 to raise awareness and to find educators who could help them. As their children became older they applied to the Adult Education Branch of the Education Department for assistance but generally adult problems were dismissed or disbelieved by authorities.

> *When we started advertising for these children with problems...at least a quarter of the replies were adults... So we invited them to come to our house and I suppose we would have had about sixty some nights. Then we realised that we had to do something for them... Anyway we felt we had to get rooms and try and get adult education. So I went to adult education* (and this man said) *there wouldn't be anybody who would go through*

> *our schools...you must be joking, and, no, it couldn't possibly happen. (Betty Vicary interview, 28.2.95)*

Eventually, in the early 1970s, classes for 'adults with reading difficulties' were established in rooms in the Adult Education building in George Street, Brisbane. *"We got the rooms and then we had the first remedial teacher who would tackle the adults, Paul Knudsen" (Betty Vicary).*

Snapshots

While at this time there were no specialist adult literacy teachers within the Technical Education Branch or Adult Education in Queensland, a number of individuals, working in isolation, recognised a need for adult literacy provision. One of these people was Marie Byrne, who had had experience of adults with reading difficulties while working in school guidance in Townsville. On her return to Brisbane she was transferred from the Education Department to work with Sadie Foster at Mount Gravatt College of Advanced Education. Foster and Byrne (1979, Preface) state:

> *Recent research reports on the state of literacy in the community have indicated that there are failed and failing readers among adults as well as in the primary school, the secondary school, amongst school leavers and the migrant population. For the adult population alone a new kind of further education is needed: one that requires immediate consideration in terms of resources. Because adults have such diverse attainment, experiences, background and needs, individual instruction is indicated. At a professional level the cost of tuition would be prohibitive. Other community needs have been met through volunteer aid. Why not literacy needs?*

In 1972 Sadie Foster and Marie Byrne were given permission by Mr Nimmo (Principal of Mt Gravatt CAE) to teach adults voluntarily, after hours, at the College. So began the Mt Gravatt Adult Literacy Project. At the end of 1972 Sadie and Marie made contact with a number of adult literacy groups in the UK and gave the first public presentation about adult literacy in Queensland at the Remedial Teachers Association conference in 1972. The initial adult literacy project commenced in 1973, then in 1975 students from Mt Gravatt CAE also became interested in assisting adults in a voluntary capacity. By 1976 the organisers had reached the stage where they *"could implement the particular objectives relating to recruiting volunteer tutors from the community"* (Foster & Byrne, 1977:2). To promote their adult literacy project, they advertised in the Courier Mail and, through their colleague, Dick Walker's involvement in Rotary, placed signs in factories in the Salisbury area. In 1977 they received a Commonwealth (TAFEC) grant to train volunteer tutors and advertised on the radio. (I was one of those volunteers.) Foster and Byrne (1977) comment in their project report that whereas the majority of students seeking assistance were young single males who were largely unskilled manual workers with low literacy skills (Table 1), the majority of tutor applicants were women over the age of 30, with significant educational qualifications and who had worked or were working for more than one voluntary agency (Table 2).

Table 1 Status of students

Gender	Married	Single	Widowed div/sep	Skilled manual	Unskilled manual
Male	8	12	3	6	17
Female	4	2	1	0	7

Adapted from: Foster & Byrne, 1977:11

Table 2 Status of tutors

Gender	Married	Single	Widowed/ div/sep	Home duties	Home + work	Retired	Professional qual	Technical qual
Male	0	0	0	0	0	0	0	0
Female	19	3	5	16	8	3	11	11

Adapted from: Foster & Byrne, 1977:5

At the same time (1974), in Warwick, Mavis Cooper, who had been instrumental in establishing a school development program for children with learning difficulties, was approached by a young mother seeking help for herself. While on the one hand Mavis was battling the Education Department for school support services in rural areas, on the other hand she had attracted 12 adults seeking help. Mavis was not a teacher but she enlisted the help of her friends and with the assistance of an overworked resource teacher, started a volunteer adult literacy program in Warwick in 1975.

> *I can't even remember when the first tutor training thing officially started but you see I wouldn't have been game to start anything because I just felt I didn't know anything and then I suddenly realised I knew more than anybody else did because I was actually doing it. (Mavis Cooper, interview, 19.4.95)*

To assist the children she became involved with SPELD, eventually becoming State Secretary, while to assist the adults she attended the 1976 Adult Literacy Conference in Sydney where she was introduced to Geoff Falkenmire (whom she already knew) and Kath White who agreed to conduct tutor seminars in Warwick. Allan Bright, who at this stage was Officer-in-Charge, Adult Education, at South Brisbane College of TAFE, with responsibility for Adult education throughout the total Brisbane Metropolitan area, states:

> *I would have liked, to have had an adult literacy officer in every district and then people like Mavis would have had somebody local to get funds from or assistance, and for me that was the way to go. I mean the New South Wales model was what I wanted to see happen in Queensland ...and something like Kath's place in Redfern. [Reference to Kath White and the Adult Literacy Information Office] (Allan Bright interview, 5.5.95)*

(The model referred to was one in which an adult literacy teacher was appointed to every TAFE college in the state.)

In 1979 Marian Norton, a former primary school teacher, was also concerned with what happened to children with learning difficulties once they left school.

> *...if this happens every year, where do these people end up? How do people get by if they don't have these basic skills?"* Then, *"when sitting in a Kombi van on Dartmoor (UK) I heard a radio program about the tutor training in adult literacy...BBC program and they talked about these volunteer tutors and I declared... I'm going to do that! (Marian Norton interview, 24.4.95)*

Marian received advice from Allan Bright at South Brisbane College of TAFE and Janette White at SPELD as well as Kath White in Sydney. Marian also received a $50 donation from the Lions Club of The Grange and started Wilston-Grange Adult Literacy Centre.

BEST COPY AVAILABLE

> *...so we had the inaugural meeting...in 1979...and fortunately one of the people who offered knew some of the organisational things and assisted with setting out the application form* (for a grant). *We probably just met when we had to...but then I started to get more students contacting me and I needed tutors, so it soon became clear that I had to run a tutor training program...and I must have contacted Janette White again. (Marian Norton interview, 24.4.95)*

The first volunteer tutor training program took place in 1980 under Marian's house using a combination of Kath White's and the BBC tutor training programs. Subsequently Jenny Farmer (also a former primary teacher) joined Marian's program and contact was made with Mavis Cooper in Warwick and Marie Byrne at Mt Gravatt. In 1980, Jenny attended the 4th National ACAL Conference, in Adelaide where she met Allan and Mavis as well as Arch Nelson and Kath White. The theme of the conference was "Skills for tutors, Skills for organisers and co-ordinators" which was just what Jenny (and Marian) needed at that time. Discussion revolved around issues and change: technology, libraries, tutors, and values. Jenny returned with lots of ideas and enthusiasm.

> *There were a lot of volunteer tutors at the early conferences ...and they were really very enthusiastic. My memory of it was that there probably wasn't so much emphasis, well there wasn't any research at that stage...there were a lot of very practical sessions where people brought along materials that they had made and talked about them and so in that way it was almost the only teaching* (professional development) *venue people had. (Jenny Farmer interview, 16.3.95)*

These snapshots demonstrate how the adult literacy volunteer tutor system in Queensland emerged to cater for an identified need which, in lieu of systemic support, relied initially on the dedication of a few, significant individuals. Most of these people would have espoused Humanist philosophies with a focus on personal integration and wholeness, and would use the metaphor of personal growth. In the next section the focus will be on how this ideology was realised in practice.

Ideology: Literacy as a right, individual empowerment

In keeping with humanist philosophy is the notion of volunteerism, which in this case involved members of the community who wished to 'empower' others or 'share their love of reading' completing a short training course then working one-to-one with an adult literacy student. *"To develop student independence and self-esteem and ensure a more effective participation with the Community and the workforce" (Wendy Gallagher, 1987).* Often this went hand in hand with a 'functional' approach to literacy.

> *So it became a matter of noting just where literacy was used and needed, and what was involved, and how people got around it if they didn't have it or didn't have the level of skill necessary. ...so it didn't take long to hop onto things like newspapers and 'special' ads and things like that. (Marie Byrne, interview, 29.3.95)*

As White (1986:3) states:

> *Practitioners early recognised that the adult student was a volunteer who would 'vote with his feet' if the lessons were perceived as irrelevant, and that the best motivator for the student's continued learning was a focus on literacy tasks which had immediate application to that individual.*

Students had unexpected and particular interests but *"gradually common areas of concern became obvious: form-filling, banking, driving, cooking, child care, and so on"* (White, 1986:3). At one extreme, literacy tuition might be perceived as 'domesticating' (Kazemek, 1988), about enabling students to become 'good citizens' to fill in forms, read instructions and regulations, or alternatively, as providing access to mainstream education, as a second chance:

> *I guess I was a very keen reader. I had a philosophy that everybody's birthright was that they should be able to read and write. Here I was suddenly given the opportunity or I saw an opportunity for me to create an opportunity, to have access to people who had missed out initially and perhaps would like a second chance at literacy. (Gail Chudleigh interview, 10.5.95)*

This ideology was characterised by the commitment of practitioners (sometimes seen as a 'vocation' less charitably as "*an addiction worse than cocaine*" Mal Weier), with an emphasis on empathy, and confidentiality.

> *Every person has a natural right to his [sic] secrets, and, as with material things, the person has the right to the possession, the lawful use, and the disposal of his secrets. The disclosure of a person's secret 'contrary to the owner's will, even if no other damage results, is a theft. The basis of the right to natural secrets is man's natural right to his reputation. (Biestek cited by Janette White)*

So, the educational philosophy in these early years revolved around a student centred curriculum, goal-setting, negotiation, individualised programs, and development of student self-confidence. The educator was seen as a facilitator and supporter of learning, with a belief in 'literacy as a fundamental human right'. "*If they were able to develop to their full potential, how much more could they achieve.*" *(Laurie Miller interview, 15.5.95)* As will be shown in the next section, these beliefs are reflected in the pedagogy of the time. So, although practitioners talked about 'empowerment', this was seen in terms of encouraging personal growth, about improvement, rather than as social action, or as a process of helping adults engage in political and cultural action for freedom (Freire, 1972).

Pedagogy

Initial tutor training programs were similar to that documented by Foster and Byrne (1979). A series of five, two hour sessions covered the affective component (awareness of the program, student and tutor needs); the cognitive component (awareness of how adults learn, the reading process, materials, and lesson planning and record keeping); and the action component of tutoring (establishing rapport, strategies to promote literacy and meet individual needs, realising when and how to seek assistance). As a result, many tutor training programs endorsed a particular view of adult learning as espoused by Kohl (1974) that the skill of reading can be acquired in a natural and informal manner and that reading need not be taught by professional teachers. It was believed that people would acquire and master the skill of reading if the following conditions applied:

- guidance by a person who knows how to read and is interested in sharing that skill, and who has:
- a non-elitist, non-competitive attitude towards sharing knowledge and information;
- some understanding of the process of learning to read;
- a belief that reading is an important human activity that people should master;
- pencils or pens, writing surfaces and printed material if possible;
- a context for learning in which learners feel secure enough to make mistakes and ask questions;
- respect for the culture and mind of the learner and therefore an ability to understand and use what the student brings to the situation;

- patience, a sense that there is time to learn (Kohl, 1974).

The move towards student centred learning was also influenced by British publications such as Chris Langley's *The BBC Adult Literacy Handbook (1975)* and the *ALRA Lesson Kit for trainers of adult literacy tutors (1975)* both of which were used for initial training of volunteers. Both made use of 'case studies' and emphasised the use of 'authentic' materials for learning, while integrating phonics and sight words with a personal approach. In Australia, for example, Kath White used a list of car words taken from *Sports Car World* to show a suggested order for teaching phonics and this was incorporated into some tutor training programs. Other tutor training programs reflected a growing international interest in how people read, focusing on psycholinguistics, in which researchers such as Frank Smith and Ken and Yetta Goodman, challenged the phonics and word-based approaches. The emphasis was on 'reading for meaning' in which students predicted (on the basis of semantic, syntactic or grapho-phonic cues), compared, analysed and confirmed and initial assessment included informal reading inventories or miscue analysis, for example:

> *...knew about miscue analysis, so we often did miscue analysis in a very traditional form. She knew about Frank Smith so I read those... (Ann Kelly, interview, 29.3.95)* .

In addition, many adult literacy practitioners advocated the use of the Language Experience approach to teaching reading (based on the work of Marie Clay in New Zealand) which acknowledged the "*complexity, flexibility and subtlety of other English dialects...and gave the speakers of these dialects access to reading materials in their own 'mother tongue*" (White, 1986:4). This approach was modelled in the *Blokes at Work* series introduced by Helen Gribble at the 1978 ACAL conference and further explained in a section in *Reading and Writing Skills: A Kit for Tutors* by Margaret Iaquinto (Melbourne CAE, 1978). At the same time there was an increasing interest in writing, not formal grammar but 'process writing'. Many workshops were held around the country with students, tutors and teachers engaged in the act of writing, not just to produce a text for reading practice, but *"speaking with your own voice, naming your world and your own experience"* (White, 1986:5) following the influence of Paulo Freire, Sylvia Ashton-Warner, and Donald Graves.

Due to the lack of commercially produced texts appropriate for adult beginning readers, teachers and volunteer tutors developed individual texts focusing on students individual interests or utilised other home-exercises developed by colleagues. This was the start of interest-based publications produced by central literacy units in South Australia and Victoria such as *Len, Jean* and *Saturday* (1978); *Sam's Spaghetti Bolognaise* (1979) and *You and the Law* (1983): Victorian Council of Adult Education. Much of this writing activity coincided with a TAFEC funded National Writing Project for student writing (first proposed at the 1980 ACAL national conference) and resulted in personal accounts such as *Life on the Dole, A Caged Beast, Dixie, The Day of the Pigeons* and *And the Days After*. Students from Queensland also contributed writing for this project but the evaluation of manuscripts was facilitated by an Adult Education Extension Officer as there was still no formal State adult literacy co-ordinating or policy position.

Policy

Until the early 1980s the focus at program level had been on remediation of literacy problems. Despite the rhetoric of meeting individual student needs, there was still a deficit model of literacy.

> *I can remember unashamedly pushing the...to the press or to anybody that... of course everybody needed to be able to learn to read and we had an obligation to do this... At that stage I think that was a fairly common view and it was ACAL that started nationally to push away the welfare image...to try to get through that we needed to start to argue on different grounds and to use...social grounds but it was still not getting very far...in the department, it wasn't making much ground. In 1984 we actually managed to produce, under Julia's direction, a basic education policy, and then of course it just sat, it didn't move at all. (Marian Norton, interview, 24.4.95)*

Programs existed within the community and in some TAFE colleges, however there was a lack of co-ordination and awareness of adult literacy issues at policy level. At this time (1981), the National Conference of the Australian Council for Adult Literacy (ACAL) was held in Brisbane and this became the catalyst which brought the disparate volunteer tutor groups together to form the Queensland Council for Adult Literacy (QCAL) in 1982. The establishment of the Council was welcomed by the field as it was essential to have an independent voluntary organisation, representing the community, able to lobby for recognition of the field at State policy level, as well as for additional State funding and further programs.

> *...it was hard because in fact QCAL* (Executive) *was made up of TAFE people on the whole...and it was very difficult politically for us...if we ever put in submissions. It was definitely to get a voice for literacy outside TAFE. ...a university person would be a very good non-TAFE person and Laurie* (Miller) *was interested. He maintained an interest in unemployment and those kinds of issues and he was interested in it. We were wanting a willing figurehead really that could speak for us and the same with Lawrie Ryan. Lawrie was very interested because of the libraries... That's one thing about QCAL, its always had a strong link with the libraries. (Julia Zimmerman, interview, 5.6.95)*

In addition, the Council was seen as a possible vehicle through which professional development, otherwise not available at a systemic level, particularly for volunteer tutors, might be accomplished. (QCAL Survey, 1982)

> *The Queensland Council for Adult Literacy was involved with the teaching side of it* (professional development for volunteer tutors) *so there wasn't that dilemma of people who were not trained being involved...because the volunteer tutors were quite willing to learn as they went along and they were definitely led by people who had experience in teaching...so I think Queensland was lucky. (Jenny Farmer, interview, 16.3.95)*

Partly as a result of lobbying by QCAL, a TAFE Committee to Review Policy on Adult Literacy, chaired by Mal Weier, was established in 1984 and Julia Zimmerman was seconded from Bald Hills TAFE to write a position paper (Zimmerman, 1984). Recommendations included: the creation of specific community adult literacy funds to be distributed to colleges on a needs basis; the use of TAFE particular purpose grants to fund adult literacy programs; that Commonwealth funds should be used as **supplementary** to state funds; and that non-government volunteer groups should be given professional assistance with programs. As Kazemek (1988) states:

> *Without long-term and on-going financial support, professional input and guidance, literacy programs and tutors cannot be effective.*

Julia was seconded a second time in 1985, in order to write a *Basic Education Policy for TAFE Queensland* with assistance from Ann Kelly, Ann Mibus and Susan Greenland.

As will be shown in the next section, the number of volunteer tutor programs had increased and concern was being expressed regarding the need for volunteer tutors to be covered by insurance and questions about reimbursement for travel and phone calls were also being raised. Further, there was a strong demand for recognition of an adequate ratio of paid professional staff to volunteers so that tutor/student progress could be effectively monitored and adequate support and guidance provided. It was advocated that the tutor trainer should be a paid professional, experienced in adult literacy, as the comprehensive role included: initial screening; face-to-face training; continuing on-the-job training; on-going long-term support, guidance, feedback and formal and informal professional development

Volunteer tutor programs

According to a survey commissioned by the Queensland Council for Adult Literacy: *Adult Literacy/Numeracy Provision in Queensland Survey Results - December 1982*, there were 16 adult literacy programs in Queensland in 1982, nine of which provided volunteer tutor programs (Table 3). The stated aims of the volunteer tutor programs were:

a) To attempt to provide individualised instruction that answered each student's needs. These were determined in consultation with the student;
b) To promote in students a general feeling of confidence and self-esteem;
c) To improve students' language skills so that they can participate more extensively in every-day discussions; and
d) To fill specific gaps in students' education in order that they can become eligible to enrol in further courses.

Many tutors were qualified teachers but all tutors receive at least 6 hours preliminary training. In the majority of programs, training exceeded twelve hours. Programs in Townsville and Ayr followed Michael Stock's phonics-based programs and tutors there were trained during an intensive five day course. All programs conducted in-service training in the form of workshops, plus regular attendance at lectures and seminars.

By 1983, volunteer programs provided tuition to more than half the students in adult literacy programs in Queensland. Volunteer groups were key providers, providing non-institutional, personalised, responsible and local services which were attractive and acceptable to many students still reminded of past failures. These principles were endorsed by participants at the Fourth International Conference on Adult Education, Paris, 19-29 March 1985 who adopted the declaration *The right to learn*. At this time, many of the programs were supported by small TAFEC grants distributed by the Board of Adult Education. Some also received support from the local TAFE college, usually in the form of a paid Tutor Adviser, use of facilities or resource collection.

> *...so I inherited 13 volunteer tutors...when I got there* (Bald Hills) *in October 1983 and I started classes at Bald Hills the following January. Also at Caboolture there was a program but it was just classes so we started the volunteer program...and in '83 we also started training volunteers at Redcliffe...and we strengthened Marian's program* (Wilston-Grange) *with much more financial support...paid Marian nowhere near for what she did. (Julia Zimmerman, interview, 5.6.95)*

Other programs were totally supported by the local community through fund raising, donations from service groups and donations of equipment.

> *A strong liaison between volunteer groups and TAFE adult literacy programs can bring about a unique partnership between community and institutional provision.*

> *However it is most important that community groups maintain their autonomy to enable them to continue to meet community needs in a flexible and responsive manner and to continue to provide a non-institutional educational service. (Zimmerman, 1984:9)*

The adult literacy movement nationally, has been criticised (Zimmerman & Norton, 19..) for failing to take advantage of the Social Justice agendas of the 1980s in order to become part of mainstream education and training. Viewed from this perspective the continued use of 'well meaning' volunteers reinforced a 'welfare' image and ensured that the field remained marginalised. To some extent this has changed with the recent emphasis on the need for basic skills for employment. In the next section, the focus is on how economic rationalist ideologies have affected policy and curriculum, and how this has caused tensions with the personal philosophies of practitioners.

The contemporary scene

Ideology: social justice to economic rationalist

While battles for recognition of the field were being fought at the State level, major policy initiatives were being adopted at the National level, with crucial implications for adult literacy provision. In line with trends in many industrialised countries, a Technocist discourse emerged. Using the metaphor of an assembly line, 'education' was being replaced by 'training', seen in terms of producing skills and competencies for a better educated, flexible, adaptable workforce with portable skills. This ideology reflects the socio-economic conditions of the 1980s onwards which promoted the linking of skills to industrial awards, economic rationalism, the deregulation of the training industry with a corresponding movement from public to private providers and a casualised workforce. While education was seen as a training exercise with imposed national curricula and employment focused funding, literacy was perceived as being both a tool or technology and a competence or essential (generic) skill, tied to narrow vocational goals. This philosophy underpinned the principles of *Skills Formation in Australia* (Dawkins & Holding, 1987) which stated that skills formation was essential for meeting national economic targets, thereby linking training to improvement in economic performance. This provided the impetus for the mainstreaming of aspects of literacy provision. 'Functional literacy' was required to improve an individual's employability, whereas 'basic literacy' often referred to initial reading and writing skills acquisition. At the same time, *A National Policy on Languages* (Lo Bianco, 1987) established English as the principal language of Australia and recognised the right of access to language services. The adoption by the Commonwealth government of this policy resulted in the merging of language and literacy in workplace education and Commonwealth funding for Labour Market Programs for the long-term unemployed.

> *"However, it must be reiterated, that literacy is best learned when it is integrated with the learning of other skills the client is motivated to learn. It cannot be assumed that skills learned in a 'general' reading and writing class will transfer to either a vocational education/training context, or to a workplace. research has indicated that the 'remedial' model does not work as well as a developmental/integrated model of literacy learning" (BEVFET, 1991:37).*

Pedagogy

These discourses were reflected in Queensland in moves to have all training in the TAFE sector, competency based. And adult literacy was no exception. So, for example, the Review of the Adult Literacy Volunteer Tutor Training Curriculum undertaken in 1989, contained the following guidelines:

> *Vocational Education is currently being challenged by a number of national development including:*
>
> - *Award restructuring which provides a link between formally recognised skills and career development*
> - *Competency-based assessment which provides a clear picture of the skills, knowledge and attitudes an individual possesses, and*
> - *The proposed National Training Board which will provide standards of competence required in occupations across the nation*
>
> *...As changes occur there will be a need for a better designed and more rational approaches to Vocational Education and training*
>
> *...Rather than waiting for these changes and then reacting to them, the decision has been taken to anticipate and develop programs that allow identification of a persons skills, knowledge and attitudes and the standards of competency a person has attained.*
>
> *Any learning program developed must take account of the needs of the adult learner, who is self directed with internalised goals, and has a readiness for learning based on the recognition of their own problems/needs etc.*

In a move to standardise training within TAFE programs, an Adult Literacy Volunteer Tutor Training Curriculum was adopted to provide a framework for tutor trainers. The aim was to enable trainers to organise a comprehensive training program which would provide opportunities for volunteers to develop the knowledge, attitudes and skills considered most desirable for tutors of adult literacy students. The author stated that:

> *It is not intended to be a handbook for trainers. The format is modular, each module being built around a cluster of related knowledge/skills and consists of a number of units. These provide for the development of specific knowledge, attitudes and skills within the cluster. (BEVFET, 1990)*

The curriculum was designed to allow for flexibility of implementation and extension of the course through the addition of modules/units. It was competency-based with learning outcomes related to knowledge, skills and attitudes.

> *I sent out forms to all volunteer tutor co-ordinators throughout the state and I asked them to think of a good tutor in their program and what their competencies were, then list them in columns under Knowledge, Skills, Attitudes and Knowledge application...and there was a very high degree of agreement. (Wendy Kerr interview 9.9.96)*

As opposed to the informality of assessment in previous tutor training programs, volunteers must now demonstrate that they meet the criteria, at the indicated standard, associated with each learning outcome to be assessed as competent. From a previous commitment to a short training course, now the total number of hours of training amounted to a minimum of 100 hours over a twelve month period and aimed at providing a balance between structured learning and practice with a minimum of 36 hours structured learning (pre-service group training; in-service group training; guided learning through one-to-one instruction, face-to-face, via telephone or mail). Practice included the preparation of learning programs (with support); one-to-one tutoring with support; and recording and reporting of student progress, with support. The implementation of the tutor training curriculum received a mixed response. Some co-ordinators welcomed a standardised package but others strongly opposed the imposition of a curriculum.

> *When are we going to get support from organisers who will stand up for the principles of Literacy Education and stop others trying to mould it into the latest fashion shape? ...More and more I feel backed into a corner by all the changes, reports and requirements. Having a new tutor syllabus of ANY kind will not fix this! Nor will it pay for my classes next year. Nor will it get me extra help in the form of full-time staff. THIS ALL DEPENDS ON ME. IF I DO NOTHING THE WHOLE THING WILL FALL IN A HEAP. My tutors did in excess of 1400 hours this year at $20.05 this is $28 070! How much blood does the system want! (Personal communication)*

> *There's a lot of interference, you're not free to deliver individual type stuff. You have to get by certain regimental sets of guidelines and rules and things and you know I find that very frustrating. ...at least when you were doing it on your own you could serve the person that you were dealing with and it was much better. (Mavis Cooper, interview, 19.4.95)*

Under the new curriculum, volunteer tutors were expected to commit themselves to working with a student for at least twelve months. Many tutors found this too demanding and consequently there was often a high turnover rate. It also meant that there was, and continues to be, a continuing demand for new tutors and the provision of tutor training courses. Also there was a demand for tutor training in country areas not close to TAFE colleges where volunteer tutors would be the only means of providing support to students. Although some training courses in rural areas have been conducted through QCAL, TAFE remains the main provider of tutor training courses for programs operating both within TAFE and in the community. These courses were offered free of charge, however in early 1990 TAFE allowed some colleges to charge a small fee to attend courses. This policy was soon abandoned following *"vigorous representations from workers in the field"* (Morris, 1991b:62). Subsequently the Queensland Distance Education College piloted a distance tutor training course, originally developed in Western Australia, using course noted supplemented by weekly tele-tutorials. Many of the issues relating to provision in rural and isolated areas were eventually addressed following the development of State policy initiatives from 1990.

Policy

Morris (1991:33) states *"In the absence of a formal State policy on adult literacy the Manager of the Access Education Branch has had to rely on a series of best judgements as to how adult literacy programs should best be developed"* however 1990 marked the arrival of a new, Labour, government in Queensland as well as International Literacy Year (ILY). The Goss Government fulfilled a pre-election promise by implementing a review of the funding and staffing of adult literacy courses and facilities in Queensland (Morris Review) the recommendations of which were to have major implications for adult literacy provision. Meanwhile, in 1991, the Bureau of Employment, Vocational and Further Education and Training (BEVFET) within the Department of Employment, Vocational Education, Training and Industrial Relations (DEVETIR), was restructured with the formation of the Vocational Education, Training and Employment Commission (VETEC). One of VETEC's key goals (8) was "to improve access by the disadvantaged to VETE services" (VETEC Overview, No 1, May 1992). Given the move towards increased Federal funding of literacy and language provision following the adoption of the Australian Language and Literacy Policy (ALLP), there was a need to advise VETEC on literacy and language policy and funding priorities, therefore a VETEC Literacy and Language Working Group was established to consider literacy issues, to advise on policy and funding, and to report to VETEC and the Minister by July 1992. TAFE, now TAFE.TEQ (TAFE, Training and Employment Queensland) became one of many providers along with an increasing number of private providers and agencies such as Skillshare. In 1993, the *Queensland Adult English Language, Literacy and Numeracy Policy and Implementation Strategy* (VETEC, 1993) was launched, with the goal being:

> *to enhance effective participation by all Queensland adults in vocational education and training, in the workplace and the community, through improving access to quality language, literacy and numeracy programs.(VETEC, 1993)*

The implementation of this policy resulted in the establishment of the Queensland Adult English Language, Literacy and Numeracy (QAELLN) Council and six regional language and literacy networks to operate in conjunction with and to achieve the objectives of the National Collaborative Adult English Language and Literacy Strategy (NCAELLS).

> *The QAELLN Council has requested additional funding towards satisfying a significant level of demand for language, literacy and numeracy training which has been identified by ITABs, the Regional Networks and through a Remote Areas Language and Literacy needs analysis. ...The ANTA Literacy Recurrent grant ($1.2m) was strongly oversubscribed in 1995 for both TAFE and community providers. This funding will continue to be allocated as 75% to be delivered through TAFE and 25% through community organisations. Close links between providers will be encouraged through the Regional Executive Officers to ensure effective quality provision. (TEQ, 1995:59).*

This policy, then, moved towards addressing issues of provision in the regions and also acknowledges the place of community providers. However the major proportion of the funding continued to be allocated to TAFE for the provision of accredited courses, which in some instances has led to the demise of volunteer tutor programs.

Volunteer programs

In 1989 there were an estimated 1000 volunteer tutors in Queensland providing an estimated $1 million saving on education costs. Table 4 shows that in 1990, 22 colleges reported using volunteer tutors and that 21 of these conducted tutor training programs. In all, 785 volunteers were trained in 63 training programs; 814 volunteers worked with students and provided as least 75 296 hours of student contact. Costing this at $15 per hour, the monetary contribution would amount to $1 129 440 (Morris, 1991:54). In addition, 11 community groups or organisations, listed in Table 5, conducted adult literacy programs with the assistance of volunteer tutors and catered for the needs of a wide diversity of students (Morris, 1991:69).

By 1995, TAFE colleges had been restructured into regional TAFE Institutes each of which offered a range of adult literacy programs, including one-to-one tuition with volunteer tutors with both full-time and part-time courses being delivered under CNL03 Certificate in Vocational Access, an accredited, CBT course. Volunteer tutors were enrolled in CN543 for initial tutor training, then once trained they enrolled in CNG62 which covered in-service volunteer tutors working with students on a one-to-one basis. The data which appear in Table 6 reflect this move. These data have been recorded on the CAPS (College Administrative Project System) but as they are collated by TAFE Institute, those presented in Table 4 have been reconfigured (Table 7) so a comparison may be made. As may be seen, in 1995 621 volunteer tutors were working with students giving a total of 40 975 voluntary student contact hours (SCHs). This compares with 849 tutors and 80 736 SCHs in 1990, although a larger number of tutors were trained in 1995. Despite the limitations of the data, the trend towards decreased provision by volunteers is apparent. Possible reasons for this drop in numbers are presented below. At this stage there are no comparable data for community groups although the data supplied may cover some community programs supported by TAFE Institutes.

The implementation of the Adult Literacy Volunteer Tutor Training Curriculum (CN543) not only provided 100 hours of training for volunteer tutors but also much greater accountability. For tutor co-ordinators, although there was a dramatic increase in record keeping and paperwork associated with entering program details on to the TAFE database (CAPS), it became much easier to identify tutors who were not performing. Tutor co-ordinators have also commented on changes in the nature of volunteers. For example, not as many people in the community are coming forward as volunteers *"I used to get 80 responses to ads, these days 20 if we're lucky"(personal communication).* Another co-ordinator commented that many women who formerly might have been volunteers, are now having to return to the workforce. As a result, it is more difficult to get volunteers for daytime programs and volunteers do not stay as long - they leave when they get paid employment. Others are not as prepared to do all the training that is required, as the curriculum has become more formal, tutors become apprehensive - gone are the days when they could say 'I think I'd like to sit with someone and help them read'. In contrast two co-ordinators commented on the growing number of people who look upon the volunteer tutor training course as a de facto qualification to assist with gaining employment.

> *When I first came into tutor training...you got a group of 15 volunteers and they were 15 people who wanted to do volunteer work. Now, the group of volunteers that you would get would be a real hotch potch. You'd have those who wanted to get back into teaching, then there were those who were at college doing a course and wanted to use the course as a sort of training ground ...and then you'ld have some who would go away and work in another program where there was no training. ...You could get 15 people coming for training and end up with three tutors out of it. (Wendy Kerr interview, 9.9.96)*

As a result, one co-ordinator has stopped issuing Statements of Attainment to avoid misrepresentation. She is also concerned that many of the people coming for training do not have the empathy or commitment required of practitioners in the field. This is one of several issues which have emerged from this study.

Issues

BEST COPY AVAILABLE

In 1986, James Draper (in Nelson & Dymock, 1986) identified a number of issues which are just as pertinent today. The first related to the reconceptualisation of adult literacy programs with the move towards certification, national reporting and the continued dependence on Commonwealth funding. In 1986, Nelson and Dymock commented *"Present funding for adult literacy programs is based on annual allocations and does not allow for effective long-term planning and operation.." (p.6).* Things haven't improved! In fact since the recent (1996) budget with the withdrawal of much of the funding for Labour Market Programs, there have been severe cut backs to many adult literacy programs, including the recruitment and support of volunteer tutors.

> *The minuses are the sporadic funding. At least when I was on my own I didn't have to answer to anybody and so I could get things done. I could plan things and go ahead but when you are subject to funding, and to no continual funding, it limits your programming. ...everything seems to hinge on the funding and I think I would have preferred not to have TAFE take me in. (Mavis Cooper, interview, 19.4.95)*

Program co-ordinators are faced with trying to stay true to their beliefs in self-directed, learner-centred, curricula in informal, shared, trusting environments, when neither the program structure nor the administrative structure supports this. In fact, some TAFE co-ordinators have commented on the need to fight administration in order to retain their community-based volunteer tutor programs. Another aspect of organisation change has been the effect of creeping bureaucracy, with increasing amounts of time being consumed in accounting for government funding, assessment, recording, evaluating and reporting on students, tutors and programs.

Allied to this, is the move to link literacy skills with employment outcomes. As Charnley and Jones (1978) pointed out, students attend adult literacy programs for help with their literacy skills, but equally as important are the affective areas of adult learning. Students need to develop a positive, confident view of themselves as learners and have similar trust and confidence in the provider. Not only does this take some time, which is not always available in Labour Market Programs, but this is an area in which individual tuition and the building of rapport is crucial. It is here that volunteer tutors have a vital role to play.

> *That's another thing I have problems with. The people who aren't employed for a long time, what's happened to them is they have just completely lost their self esteem ...and unless you can fix up that initial self-esteem problem you are not going to get anywhere. (Mavis Cooper, interview, 19.4.95)*

Trained volunteers provide a flexibility of service in community programs which would not otherwise be available, however they are not a cheap alternative to professional staff and they do need appropriate support. Volunteers are para-professionals with varying degrees of commitment, availability, skills and knowledge. Grave concerns have been raised about the use of volunteers regarding questions of quality, industrial relations, and workers compensation (DEVETIR, 1991). The industrial tension expressed in some States over the possible displacement of trained teachers by volunteer tutors has not been so apparent in Queensland, however concerns have been expressed about the appropriate use of volunteers in Workplace English Language and Literacy Programs. Another related issue was raised by one tutor co-ordinator, regarding the ethics of requiring volunteers to complete a certified training course before being allowed to volunteer their services.

> *The syllabus to come is surely the forerunner of tutors PAYING for courses? I am only prepared to teach such a paid course if there is an exam and a teaching prac*

> *and if the tutors can then be paid for their time. I am NOT prepared to ask people to pay and then ask them to give FREE teaching hours.(Personal communication)*

From a critical perspective, it is also useful to examine 'what' and 'whose' literacy? As we have seen, the 'what' in ideological terms has come to mean 'skills for jobs'. So, from a government perspective program outcomes are measured in terms of production, of reducing unemployment statistics or as a decrease in social costs. Conversely increased literacy may be seen as a means to increase and maintain governmental authority. *"Everyone must be able to read, so that the government can say: Ignorance of the law is no excuse" (Levi-Strauss, cited in Brodkey, 1986).* From the liberal-humanist perspective, outcomes are seen in terms of meeting individual needs as negotiated during the program. However this assumes that each participant comes from an equal position of power and clearly this is not the case. The data presented in Tables 1 and 2 indicate that the volunteers were mainly educated middle-class women whereas the students were mainly but not exclusively, young working-class males who may or may not be employed. So the question is 'whose' literacy? Whose interests are being served? Too often today literacy is being defined in functional terms 'we'll tell you what you need to know'. However, some volunteer tutors, if asked, would respond in terms of passing on a love of reading - 'it must be awful not to be able to read'. In both cases practitioners are acting as 'gatekeepers' (Wickert 1992) allowing access to mainstream elitist or Technocist discourses.

> *I was teaching white middle class skills to people who could never possibly use them or who wouldn't possibly use them...I was trying to reconstruct my interpretation of adult literacy from my school based knowledge. (Ian Falk interview, 30.6.95)*

We cannot separate literacy or literate practices from debates about ethics and values. Being literate means having control over certain discourses some of which are more highly valued than others. However if we believe that literacy is an agent of social change, then students must take control of this process. According to Bruce (1996:3) the 'information highway' *"was originally conceived as auguring a new age of two-way communication to empower people of all classes by giving them both information and voice in decision making."* Maybe the emerging hypertext literacies will enable students to return to the notion of *"speaking with your own voice, naming your world and your own experience"* (White, 1985:5). The multi-media systems of the 21st century will merge distinctions between oral, written and visual literacies with semiotics.

> *As students ...use cybertools in their own ways for learning, the communication aspect became (sic) more central. ...cybertechnology could do more than represent someone else's information; it could also be a way to share one's own ideas ...we merge, for better or worse, with our own inventions. (Bruce, 1996:9)*

Conclusion

So, what of the future, will volunteers still be needed? The answer is 'yes'. We are seeing dramatic changes in literate practices in relation to new technologies which involve issues regarding privacy of information, dealing with 'smart cards', telemarketing as well as navigating in cyberspace. Since the formative years of adult literacy provision in Queensland, available funding has proved to be totally inadequate to provide sufficient paid, professional staff to address these issues effectively (DEVET, 1990). The appropriate use of volunteers adds an extra dimension to programs provided by professionals and makes possible a wider more diverse service.

> *It is, in my view, much more important that people who work together on our literacy problem are likely to develop the intelligent and compassionate attitudes and*

> *relationships that we must have if the technologically developed society of tomorrow is to be also a sane and humane society: a society which tries to give a 'fair go' to all. (Nelson, 1989:34)*

REFERENCES

BEVFET, DEVETIR. (1991). House of Representatives Standing Committee on Employment, Education and Training. *Queensland submission to the Committee's inquiry into literacy needs in the workplace. Vol.4.* Jan 1991. Canberra: AGPS.

BEVFET, (1990). *Adult Literacy Volunteer Tutor Training Curriculum*. Queensland: BEVFET, DEVETIR.

Brodkey, L. (1986). Tropics of literacy. *Journal of Education, Vol 168*, No. 2 . 47-54.

Bruce, B.C. (1995). Twenty-first century literacy. *Centre for the Study of Reading. Technical Report No. 624.* University of Illinois at Urbana-Champaign, USA.

Charnley, A.H. and Jones, H.A. (1979). *The concept of success in adult literacy.* Cambridge: Huntingdon Publishers.

Dawkins, J. and Holding, C. (1987). *Skills formation in Australia: 1987-88 budget papers.* Canberra: AGPS.

Declaration of the Fourth International Conference on Adult Education. (1985). *The right to learn.* Paris, 19-29 March 1985.

DEVET. (1990). *The rationale for training volunteers as tutors in an adult literacy program in Queensland.* Access Education Branch, DEVET

Ducan, W.K.G. (1944). Adult education in Australia. In D. Whitelock (Ed). *The vision splendid.* Armidale: Adult Education, University of New England.

Dymock, D. (1982). *Adult literacy provision in Australia: Trends and Needs*. Armidale: ACAL.

Dymock, D. (1984). A focus on learning. *Australian Journal of Adult Education Vol 2*, No 2. 3-7.

Dymock, D. (1993a). 'Fall out the illiterates' - lessons from World War 11 adult literacy program. *Open Letter, Vol 3*, No 2. 53-66.

Dymock, D. (1993b). 'An issue of significant community concern': the postwar development of adult literacy policy and provision in Australia. In S. McConnell and A. Treloar (Eds) *Voices of experience: changes and challenges*. Canberra: DEET.

Falkenmire, G.W. (1976). Operation literacy: research and action among adults in New South Wales. *Literacy Discussion. Vol vii*, No 3. Autumn 33-61.

Foster, S. and Byrne, M. (1979). *A study of tutor competence in an adult literacy project.* Brisbane: Mount Gravatt College of Advanced Education.

Foster, S. and Byrne, M. (1977). *Using volunteer tutors to assist an adult population attain literacy.* Brisbane: Mount Gravatt College of Advanced Education.

Freire, P. (1972). *Pedagogy of the oppressed.* Sheed & Ward.

Gallagher, W. (1987). Caboolture Adult Literacy Group Inc. - Bill May Memorial Seminar. *Write On, Vol 4*, No 2. June.17-18.

Grant, A. (1985). *Opportunity to do brilliantly: TAFE and the challenge of adult literacy provision in Australia.* Canberra: AGPS.

Jones, H.A. and Charnley, A.H. (1979). *Adult literacy: A study of its impact.* UK: National Institute of Adult Education.

Kazemek, F. (1988). Necessary changes: professional involvement in adult literacy programs. *Harvard Educational Review. Vol 58.* No 4.

Kohl, H. (1974). *Reading how to.* London: Penguin.

Lo Bianco, J. (1990). *National policy on languages.* Canberra: AGPS.

Morris, B. & Associates. (1991). *Opening doors: A review of adult literacy needs and provisions in Queensland.* Brisbane: DEVETIR.

Nelson, A.J.A. (1989). *My dear ministers.* Armidale: Department of Continuing Education, University of New England.

Nelson, A.J.A. and Dymock, D. (Eds). (1986). *Adult literacy and community development.* Armidale: Department of Continuing Education, University of New England.

Pearse, E.J. (1976). Adult literacy education in Australia: A survey of provision. *Literacy Discussion, Vol vii,* No 2. Summer 77-92.

Queensland Council for Adult Literacy. (1982). *Adult literacy/numeracy provision in Queensland survey results - December 1982.* Brisbane: QCAL.

Searle, J. (1985). Student expectations in adult literacy programmes.In R. Francis, L. Hayles, D. Nelson & G. Sabto. (Eds). *Readings in Adult Basic Education.* Melbourne: ACAL.

Searle, J. (1984). *Student expectations in adult literacy programmes.* Unpublished Grad Dip (Reading) thesis.

Training & Employment Queensland. (1995). *Queensland State Training Profile 1996.* Training & Employment Queensland, DEVETIR.

VETEC (1993). *Queensland Adult English Language, Literacy and Numeracy Policy and Implementation Strategy.* VETEC , Oct 1993.

VETEC Overview No. 1 May 1992.

White, K.A. (1986). Influences on adult literacy practice. In A.J.A. Nelson and D.Dymock (Eds) *Adult literacy and community development.* Armidale: Department of Continuing Education, University of New England.

White, K.A. (1980). *Adult literacy provision in Australia.* Sydney: Adult Literacy Information Office.

White, J. (1983). The importance of confidentiality. *Write On, Vol 1,* No 3. December 4-7.

Wickert, R. (1992). Constructing adult illiteracy: mythologies and identities. *Discourse. Vol 12,* No. 2. April. 29-38.

Zimmerman, J. (1984). *The case for increased adult literacy provision in Queensland.* A draft discussion paper prepared for the Supervisor, TAFE Operations.

Zimmerman, J. and Norton, M. (1990). The challenges for adult literacy in Australia. In J.V. De'Cruz and P. Langford (Eds). *Issues in Australian Education.* Melbourne: Longman Cheshire. 143-168.

Table 3

Adult Literacy/Numeracy provision in Queensland
Student Numbers (October 1982)

PROGRAM VENUE	NUMBER OF TEACHERS	NUMBER OF STUDENTS	NUMBER OF TUTORS	NUMBER OF STUDENTS
Old Town Hall	20	364	20	22
Bald Hills			13	11
Brisbane Aboriginal Program	3	12	7	22
Wilston-Grange			53	48
Toowong			5	7
Warwick	1	8	15	18
Caloundra	1	9		
Murgon	1	6		
Gympie	1	11		
Maryborough			2	24
Bundaberg	1	10		
Rockhampton	1	13		
Mackay	1	10		
Ayr-Home Hill			39	52
Townsville			43	51
Cairns	2	22		
TOTAL	31	455	177	233

Source: Adult literacy/numeracy provision in Queensland survey results - December 1982. Brisbane: QCAL

BEST COPY AVAILABLE

Table 4 VOLUNTEER TUTORS IN TAFE COLLEGE PROGRAMS IN 1990

College	Total Vols.	No. Trnd Vols	No.Trnd 1990	No. Tchg.	Tut/St Hrs
Bundaberg	43	24	35	2	1920
Cairns	95	50	64	4	6400
Central Highlands	50	49	19	6	700
Gateway	2	8	2	1	80
Gold Coast	20	27	20	3	16000
Hervey Bay	19	31	17	2	
Ipswich	32	21	14	2	550
Ithaca	75	50	65	3	6000
Johnstone	33	13	29	1	376
Logan	42	17	30	1	2520
Maryborough	68	64	60	3	5440
Mount Isa	29	17	29	2	2030
North Point	114	68	93	6	8100
Qld Coll of Art	44	13	25	1	3240
Redlands	26	28	27	2	1090
Rockhampton	27	24	20	3	1020
South Brisbane	61	40	52	4	4940
South West	24	5	22	1	872
Southern Downs	16	0	16	0	1058
Sunshine Coast	96	92	30	6	3000
Toowoomba	120	100	80	6	9120
Townsville	87	73	80	5	1320
Yeronga	62	35	45	2	4960
TOTALS	1185	849	874	66	80736

Total Vols. = total volunteers registered
No. Trnd. 1990 = number of volunteers trained in 1990
No. Tchg. = number of volunteers working with students
Trng.crs. = number of tutor training courses held in 1990
Tut/Std Hrs. = number of hours tutors involved with students
Note: No data from Kangaroo Point, Gladstone, Mt Gravatt, South Burnett, Burdekin or OLI
Source: Morris, 1991:55

Table 5

NUMBERS OF STUDENTS AND TUTORS BY COMMUNITY GROUP 1990

Community Group	Students	Tutors/Teachers
Redcliffe	60	60
Mt Isa	30	18
Toowoomba	-	-
Gatton	11-12	8
Gympie	-	-
Hughenden	9	5
Clermont	6	4
Pittsworth	5-6	5-6
Caboolture	100-120	62
Ayr	-	25
Bowen	-	-
TOTAL	260-280	180-200

In addition, the following groups (all except two operating 1:1 tutoring by volunteer tutors) received Non-Government Adult Education (NGAE) grants:

- Rotary Club of Palm Beach
- Charters Towers Adult Literacy and Numeracy group
- Inala HUB Neighbourhood Centre
- Bay Accommodation Support Service (Pialba)
- Tara & District Family Support Centre
- Regional Intellectual Disability Assistance (North Rockhampton)
- Biloela & District Program of Reading
- Chinchilla Family Support Centre
- Atherton Tablelands Community Adult Literacy League
- Eagleby Community Association Inc

Source: Morris, 1991:71

BEST COPY AVAILABLE

Table 6

ADULT LITERACY VOLUNTEER TUTORS IN 1995

INSTITUTE		CN543			CNG62	
	No. of courses	No. of students*	No. of SCH	No. of courses	No. of students*	No. of SCH
Far North Qld	1	110	10 392	1	41	2050
Southbank	1	21	1252	1	54	3150
Gold Coast	1	36	3600	1	55	2750
Bremer	1	28	3244	1	10	600
Brisbane	1	129	11 076	1	125	10 425
Mt Isa	1	12	1200	-	-	-
Central Qld	1	78	6921	1	50	5300
Yeronga	1	123	14 991	1	18	1500
Moreton	1	79	9468	1	26	1650
Northpoint	1	66	6446	-	-	-
Cooloola/ Sunshine	1	168	13 056	1	43	2150
Logan	1	36	5036	1	16	1150
Southern Qld	1	119	5811	1	86	4850
Barrier Reef	1	100	12 200	1	25	1450
Wide Bay	1	119	12 074	1	72	3950
TOTAL	15	1224	116 767	13	621	40 975

* Note: No. students counted once only
Source: AVETMISS 95 Data (NAT 110, 120 & 60) as at 17/9/96

Table 7

ADULT LITERACY VOLUNTEER TUTORS IN 1990

INSTITUTE		CN543			CNG62	
	No. of courses	No. of students	No. of SCH	No. of courses	No. of students	No. of SCH
Far North Qld	2	93		2	128	6776
Southbank	2	77		2	53	8180
Gold Coast	1	20		1	27	16000
Bremer	1	14		1	21	550
Brisbane	2	67		2	58	6080
Mt Isa	1	29		1	17	2030
Central Qld	3	39		3	35	4960
Yeronga	1	45		1	35	4960
Moreton	1	27		1	28	1090
Northpoint	1	93		1	68	8100
Cooloola/ Sunshine	1	30		1	92	3000
Logan	1	30		1	17	2520
Southern Qld	4	118		4	105	10 250
Barrier Reef	2	80		2	73	1320
Wide Bay	3	112		1	119	7360
TOTAL	26	874		26	849	80736

* Data not available

Note: No data from Kangaroo Point, Gladstone, Mt Gravatt, South Burnett, Burdekin or OLI

Parents and Literacy (PAL)

Dr Julie Spreadbury

BACKGROUND TO THE PROJECT

Literacy has been made a priority area at both state and federal levels in Australia. But it is only recently that the family has been targeted as an important solution to this problem. On a national level, the white paper, **Australia's Language The Australian Language and Literacy Policy** (1991) states that 'literacy development may be approached as a family issue as adults often become motivated to develop literacy if they are unable to read to their child'(p39).

This need for closer home-school partnerships has been emphasised by policy documents from the Karmel Report (1973) to the more recent Carrick Report (1989) and the Literacy Challenge Report (1992) which explicitly states :

> It is acknowledged that the home and parents are important first educators of children. The acquisition of literacy begins in infancy and is a developmental process founded on the events and interactions which occur within the child's family (p7)

It goes on to say that ' If the home background is not conducive to literacy then the children will start school relatively disadvantaged without the book knowledge and the concepts about print that children from advantaged homes will have already acquired prior to starting school' (p8) but also acknowledges that family literacy programs are noy always the answer to literacy problems in that it says 'some parents can do the right things and their children do not enter literacy learning easily'(P7) and that 'it's true that at risk children come from all socio-economic groups'(p4).

One of its most significant statements regarding parents and literacy is that

> It is important that families are aware that they can greatly assist their children's learning outcomes. Parents need to be educated in their vital role in assisting their child's development in early years. they need to be convinced of the importance of their influences on the learning outcomes of their children. (p9)

In Queensland the Wiltshire Report (1994) emphasises this need for parents and teachers to collaborate in children's learning. It reports that

> Because of a specialised knowledge of aspects of curriculum and delivery, many of the respondents [parents] indicated that a greater level of parental

> involvement than at present could be unnecessarily intrusive and possibly counter productive without the provision of more information to parents about curriculum issues affecting the school. (p75)

It goes on to say that these findings are in keeping with those of McGaw et al. (1992) who also conducted a survey of parental opinion and reached the following conclusion :

> The responses give much greater emphasis to parent's role in direct and indirect support of their own children's learning and in support of the school and its programs than they do to parental involvement in decision making and the governance of schools. (p76)

The Wiltshire Report in fact finds that 68% of parents agreed or strongly agreed that their involvement in schools was 'about right'(p74) and some were concerned that 'Inappropriate roles for lay people [parents] were being envisaged and pressed on schools' (p76). This latter comment has been publicly backed up by state parent bodies who do not want parents involved in school decisions such as the appointment of administrators or teachers.

The Wiltshire Report strongly recommends that curriculum documents be written in 'plain English' that is easily accessible to parents of students in our schools and strongly encourages ' continued support for parent-school partnerships in literacy and numeracy programs' (R 7.3).

FAMILY LITERACY

The findings of my doctoral research (Spreadbury, 1993) that investigated 25 Brisbane parents reading to their children in the home found that it was not merely reading to a child that facilitates that child's own independent reading, but rather the amount and quality of the interaction between parent and child that correlated with the child's reading ability at both age six and eight. Furthermore, the child's concepts about literacy on entering school were highly predictive of his/her later reading ability. Overall the study found that parents were vitally important for their children's literacy growth.

In the area of education in Australia, there has been a slowness to respond to this growing evidence of the importance of family literacy practices on children's learning in schools. The solution to the problem of children who do not benefit from schooling does not lie in devoting more resources to schools, but rather in improving parent-child interaction in the home. This has been virtually ignored, in spite of the latest evidence in the press of glaring socioeconomic inequalities such as 'children from poorer homes are less likely to complete high school or go on to tertiary education' (Courier Mail, 14 November, 1991)

LOW SOCIOECONOMIC FAMILIES

Parents and Literacy Project (PAL) has focussed entirely on low socioeconomic families of Brisbane however at the present time it is being trialled more broadly with 1000 Brisbane families from both state and independent schools.

Parents, especially from low socioeconomic areas where self-esteem may be low, often do not recognise their significance to their children's literacy learning. No known research of this kind has been carried out in Brisbane on family literacy practices in low socioeconomic families, although research overseas (e.g. Bryce-Heath,1983;1984) has shown important socioeconomic differences in families in the U.S.A. Bryce- Heath comments on the need for more in-depth analyses of different individuals in the same cultural conditions so that 'we can identify the habits of perception and conceptualisation which are the unconscious supports behind the sustained symbolic structures of literacy in varied societal contexts' (Bryce-Heath, 1984: 71).

PARENTS AND LITERACY PROJECT

This project is practical action research based on the proven fact that parents play a critical role in children's literacy learning. By combining a university research project with a community based family literacy program PAL has attracted parents who would not normally be involved in a school based parent program because of their deeply felt animosity from their own negative experiences in literacy learning from their school days.

This Intervention Program differs from most in Australia in that far from trying to make parents more skilled 'teachers' it endeavours to help parents and children escape from the 'non-literary trap' by firstly supporting parents and literacy in the home and secondly by informing them of how home literacy practices foster literacy learning in children at school. It includes practice in communication skills such as self-esteem building and positive appreciation of others and emphasises that the attitudes and skills gained in a warm and interactive family constitutes a resource that is just as real as economic resources and security. Indeed, it may be the key to giving their children a brighter future.

Because of the complexities and changes in literacy teaching especially over the last twenty years the second part of the program comes from the need of parents to be informed of how and why literacy teaching has changed from when they were at school and how best they can help their child with school literacies.

AIMS OF PARENTS AND LITERACY PROJECT

The original trial of this program had as its aims

1. To investigate family literacy practices in low socioeconomic suburb of Brisbane.
2. To run a Parents and Literacy Program for parents in this area with a child in Year 1 .

3.To evaluate the program to improve its ability to support and educate future low socioeconomic families.

Parents and Literacy Project was originally trialed with a small group of parents from Woodridge Catholic Primary School who had a child in Year 1 in 1992. In 1993 PAL was extended to include twenty Crestmede mothers. Crestmede is a low socioeconomic suburb in the Logan shire. The parents were young , only educated to the compulsory Year 10 and most only had each other as a support system.

Parents and Literacy Program was conducted over a 4 week block of 2 hours a week. It was held on Tuesdays 12.45 -2.45 in a community hall close to the school. The program was as follows :

WEEK 1 FOSTERING LEARNING IN THE HOME

Self -esteem for parents and children
Listening and affirming your child
How children learn to speak
How to encourage oral language in your child

WEEK 2 READING AT HOME AND SCHOOL

Parents reading aloud to children in the home
What books to read to your child at different ages
What is reading? Where does it start?
New teaching approaches to reading
How to help your child with reading aloud

WEEK 3 WRITING AT HOME AND SCHOOL

What is writing? Where does it start?
New teaching approaches to writing
How to help your child with school written work

WEEK 4 TECHNOLOGY AND LITERACY

Films, video games and computers at home and school
How to continue to support your child in literacy learning
Parents are important!
Evaluation of the course

THE PROGRAM AND ITS EVALUATION

A highly interactive workshop approach was used and this worked well with the number of parents involved. Parents were encouraged to see themselves as equal participants in the program with the facilitator as they were the 'experts' on their own children. There was some attrition in that only 12 parents out of the original 20 attended all 8 hours of the course but most of these only missed one session. This was attributed to sickness in the family and other family commitments. Future programs will have a babysitting component for younger children as low income families cannot afford childcare and many parents did not have a support system where relatives or friends would babysit.

Those who attended all of the course were asked to complete an evaluation form. All rated PAL as either 'good' or 'excellent'. Their evaluation comments were very positive with almost all saying the program could be improved by either lengthening it or by having all parents attend the sessions! All reported learning from it and most said they also found the sessions 'enjoyable'.

All parents were videotaped reading a narrative and a factual text to their Year 1 child before PAL began. Those who attended all sessions of PAL were also videotaped reading the same texts to their child four months after completing PAL. These videos were transcribed and analysed. A comparison showed there was twice as much interaction between parent and child during reading after completing PAL. As the amount and quality of interaction between parent and child correlated significantly with the child's reading ability at age 6, 8 and 10 (Spreadbury, 1993) this may help with literacy achievement in the children whose mothers attended PAL.

Parents said the program's value is that it seeks to update parents on school literacy teaching, support what parents are doing with their children in the home, and in turn encourages parents to support teachers in the school. All parents involved in the program felt it was time very well spent. They regretted that more parents had not attended to gain the same insights that they had learnt from it.

Overall, Parents and Literacy has succeeded in drawing in low socioeconomic parents who would not attend a school-based program because of two factors. Firstly it is community based and thus parents do not feel threatened or negative as they may in a school setting. Secondly because it combines university research with the program parents enjoyed relating to a so called 'expert' in the field who was greatly interested in them and their children. Parent participants in PAL said that this helped them see schools and universities in a less threatening way. Programs such as this may then not only support parents in their vital role as their child's first and on-going teacher of literacy and show them where literacy teaching is today but also help to heal some of their own wounds inflicted by literacy teaching in the past.

Choosing Change Through Literacy

Kath White

I celebrate the miracle of marks on paper - in our case, those 26 letters that, rearranged in infinite variety, can encode and preserve ideas across time, place and culture. They wait for the mind and heart that, in the swiftness of an eyesweep or the labour of a moving finger, will decode and also understand. To follow the evolution of those letters from the graven pictograms of ancient Byblos to the computer fonts of today is to follow an absorbing and elusive story. But the multitude of stories they themselves have told are innumerable. Even now, in every imagined corner of the round world, people are writing new stories - lovers to their sweethearts, navigators in their log-books, school pupils doing the week's composition, the introspective journaling, the journalists dashing off a scoop before the paper is put to bed. And there are those who write different sorts of stories - about whales and zygotes, about volcanic action and the planetary system, about shoes and ships and sealing wax and cabbages and kings. From all of these meetings through print, our world view enlarges to comprehend these new ways of looking at the world, and we are changed, dramatically or barely perceptibly.

It's one thing to be on the receiving end; it's another to write your own story. You may know the sort of thing you want to say, but it's often only the act of shaping it, teasing out the sequence and the connections, that makes you understand its significance. In the telling, your view of those events may change. When you put it into words to tell your family or friends or an audience, you make up as you go along, responding to the cues you receive. But when you commit it to marks on paper it becomes a more deliberative process, capable of reaching an audience whom you might never meet in the flesh.

In Nepal, where I worked for seven years, telling your own story is not part of the culture. With an *official* literacy rate of 39% in 1994 (but only 11% in remote Jajarkot where we ran a district-wide literacy campaign), the culture is necessarily basically an oral culture. However, the stories I have heard being told are usually traditional tales, deriving from the epics of Hinduism such as the 'Mahabharata' and the 'Ramayana', or folk tales similar to Aesop's fables. Like the art of the land, the story-telling genre is essentially based on the reiteration of traditional and religious material, rather than on the daily experience of ordinary people. This very characteristic makes art and literature backward-looking, rather than allowing it to be a commentary upon contemporary life. In being concerned with mythological beings, with the nobility and with the high-born, traditional Nepali stories imply that the life of ordinary people is of no particular interest or significance.

Because the language of these stories tends to be highly stylised and sanscritised, the view that story- making and story-telling is the preserve only of the privileged few is reinforced, and the distance between the hearer and the story's personae is emphasised. In fact, some have said that as more and more village children in Nepal learn to read and write, so written communication (newspapers, official documents, etc.) has become more esoteric in order to preserve the distinction between the cognoscente and the newly literate.

But rapid change is happening in Nepal, affecting the economy, the social system, traditional assumptions and beliefs. A young woman writer, Manjushree Thapa, *an important man's daughter*, educated in *the anonymity of America* and returning to her homeland in the late 1980s, documents some of these changes in her first book, Mustang Bhot in Fragments, an account of two journeys to Mustang undertaken in 1990 and 1991 . As she travels and writes, she seeks to understand herself as a Nepali and her place in the land of her birth, a land in the process of rapid and random transition. Initially she sees herself as being *adrift, raw, foreign, a hybrid self ; I no longer knew what was true.* As she travels into Mustang, she sees even there in that restricted plateau the anomalies of traditional and imported cultures meeting: *a travelling monk with a maroon and saffron robe, a Chinese sun hat and a Japan Air Lines bag; ... mud alleys lined with steel poles made in the Netherlands; at dusk the wind howled along the unused electrical lines; .. .n elderly woman in a Ladakhi-style bukkhoo and dotted Chinese shoes filling a plastic tumbler with water ... glossy Thai posters of Phoebe Cates and some Japanese models displaying their girlish sexuality. ...I saw a society divided within itself, and ruptured by objects and values from all around the world. Yet only I seemed to be struck by the odd fragments that comprised the society; perhaps this was my outsider's license. ... I saw through these disjunctions that the policy of restriction had not kept upper Mustang beyond the reach of the modern world.*

At the end of the book, Manjushree writes: *I reflect on the things that made me who I am. How did I get here? By inheriting generations of privilege ... My privilege passed as destiny, good karma from a past life. ... Now I finally understood that the cost of my independence, self-worth, confidence, hopes, dreams - my ability to determine my future - has been borne by impoverished, disempowered, suffering Nepalis; these are my roots. ... I will go back there, no longer sure if I am a member of a new Nepal or a continuation of the old one, but certain that living with this schismed identity is what it means to be a Nepali.*

When I lived in Jajarkot in the far west of Nepal, I too was constantly aware of inhabiting two worlds - the world of rural Nepal with its medieval technology, outlook and lifestyle, and my own Australian world of books and telephones, a cash economy and a multiplicity of marvels and horrors for the choosing. It struck me particularly strongly one day. I was sitting alone in the dark little downstairs office typing. The only light came in through the open door, but this was monsoon time and rain pounded outside from leaden skies and splashed in on our mud floors. The only sounds were the drumming of the rain and the irregular clanging of my typing.

Then, suddenly, everything changed. Purna, our young supervisor from Jhapra, arrived with about ten porters of varying ages to carry all the materials needed for the new classes. We provide the materials free and pay the village facilitators (teachers), but the village must provide the meeting room, the mats, the kerosene for the lanterns and the porters to carry the supplies for the eight or ten or twelve hours that separate their villages from our project centre.

Our dark narrow little office was now filled with people and the smell of old wet wood smoke from their steaming garments. They sat on the chairs, the steps, the desk corners waiting for Purna to bring down their supplies from the storage loft. I sat at the desk and checked the things off for each class as it was completed: 20 pencils, 20 exercise books, 20 sets of the government's literacy course books (entitled 'Naya Goreto' meaning 'New Path'), word-building cards and health games, roll books and wall posters for discussion and for mathematics, one box of chalk, one blackboard and four kerosene lanterns. They came to sign their names. Slowly and deliberatingly the first young man wrote his name. The next, an older man, came and said he could not write. My colleague Amrit, who had turned up in the midst of all this, produced a stamp pad, pressed the man's thumb on it, then guided his hand to the place in our register where he had to make his mark. I found it all very moving: here he was, unable himself to read and write, coming to carry the stuff that will help bring literacy to his community. He said that he too was going to join the class; his son will be the facilitator!

They packed their dokos and waited for the rain to ease. I had nothing more to do so I sat down at the typewriter to go on with Amrit's assessment. Now our typewriter was a big old Remington, high and slow. You have to pound the keys and a bell rings loudly when you're nearing the end of the line. At that point you sweep the return bar and it goes clanking back to the LHS margin. It was an awful anachronism, and I had already written to UMN Headquarters about the poor quality of our equipment, including this typewriter, and had talked this very morning to Amrit about our getting a solar-battery-powered computer.

Well, as soon as I started typing, in my slow, two-finger fashion, all the men in the room crowded around me and the machine and watched the whole process with wonderment. "Lekhai" ('Writing'), said one young man with education, and he pointed out how the writing was appearing under the crackled perspex bar that guided the paper. They watched, intrigued, and discussed the moving parts and were especially impressed by the return bar. I was witnessing a first encounter with a marvel, developed long centuries after the pen, whose mighty power they were still to learn. And I myself, though a Luddite from way back, had in my experience yet other dimensions of print technology, light years away, with word processors and graphics programmes that can clone images and turn them upside down, colour them any imaginable hue and produce colour separations, all at the command of keys and mouse. Here were men at the beginning of a revolution that would irreversibly change them and their community.

Jajarkot is affected by the processes of change. A cash economy is replacing the traditional barter system. Airoplanes fly frequently to the nearby airfield. Radio programmes (including the BBC World Service) bring the heterogeneous outside world to the steep hill homes. The traditional king of Jajarkot is a pilot with the Royal Nepal Airlines . Known to me is a lecturer in Engineering at the University; he also comes from Jajarkot, as do many other professionals in the capital. What is true for this present generation will be even more so in an accelerating future. Young people from Jajarkot will follow the nationwide (and worldwide) trend of movement to the cities, and unless they have been appropriately prepared for survival in that relentless setting, they will be swept into all the urban malaise we in Australia are increasingly aware of: anonymity, underemployment, exploitation, poverty and loss of morality. So whether the young person from Jajarkot lives in the city or remains at home, there is a need for tools for change. Literacy can be one of these.

At the beginning of this talk, I quoted at some length from Manjushree's book because it demonstrates how the process of reflecting on experience - one's own or someone else's - and articulating it leads us to a change in perception. Her book also helps to dispel the image of Nepal being some sort of Shangri-La. It never was, and it certainly is not now. The country was closed to any outside influence for over one hundred years (1846-1951), so any notions of change and choice were deliberately repressed and are still poorly understood. It is a subsistence agricultural economy with a highly stratified feudalistic social system. Village life in Nepal does not represent some idyllic Rousseauian state of innocence: poverty, exploitation and unchallenged oppression are part and parcel of Nepali rural life, and especially affect women and the low-caste and powerless. The Hindu caste system and the notion of 'karma' have taught a submissive passivity by the lower castes toward the higher. A leading Nepali anthropologist, Dor Bahadur Bista, writes in his book, Fatalism and Development, *The most important effect of this has been the absolute belief in fatalism: that one has no personal control over one's life circumstances, which are determined through a divine or powerful external agency.* Thus people observe the coming of even painful and threatening changes with a diffident despair. 'Development' is a tricky business. It involves not just technological changes but also changes in thought forms and expectations. If it is to be helpful, people should be involved from the outset, exploring the cost and the consequences of that change and carefully choosing whether they want it or not. For people not accustomed to choice and used to being submissive to the powerful, the idea that you can shape change and influence the future is a foreign and barely thinkable notion.

It was only after living and working for several years in Nepal that I recognised how deeply entrenched in my own Australian cultural background is the belief - no, expectation - that I can make any one of an infinite number of choices and that the choice that I make will have consequences that will change a situation. Only gradually did I realise that my Nepali colleagues did not work from the same general premise. This insight came about in the following way.

I worked in Nepal as an adult educator whose task was to train the Non-Formal Education staff in the UMN in methods of teaching and learning with village people. Most of these staff members have been educated solely in Nepal although a significant few have studied in India or abroad. Almost all are caste Hindus but a few are Buddhist or Christian. The majority are male, although some of the most creative and effective are female. As well, we employ many more part-time facilitators - village young people who have had six or eight or ten years' schooling at their local school but who are still following the traditional roles as farmers, small shop-keepers, wives and daughters-in law. All of these receive a couple of weeks' intensive training in development approaches and practice in teaching/learning techniques before they begin their work in their villages, and then have follow-up and inservice training from time to time.

It was just such a training that my colleague Amrit and I had devised: three days' intensive training in problem-solving approaches for our most experienced full-time professional staff. The aim was to train them in ways of helping villagers identify local problems and needs, to name local resources and strengths, and to devise ways of using these to make positive changes in the situation. The theme of the workshop was "Change and Choice", a title that I had suggested and which Amrit had accepted without much discussion. In the first session on Day One, the participants identified changes that had occurred in their own villages over their lifetimes; in the second session they were asked to discuss and analyse personal changes they themselves had experienced; and in the third session they were required to conjecture what changes new technologies might bring to present practice. The first session went well, with good zestful discussion. It was in the next session that we drew a blank: asked to identify critical situations, influences and decisions that had brought about important changes in their personal lives, the participants remained confused: "We don't understand the question, Didi," they said. The four expatriates in this group of fifty, much more skilful in Nepali than I, rephrased the question this way and that, but still there was no comprehension. We broke for lunch after a session that seemed to get nowhere, to be a complete flop, but I was greatly challenged by it, for it had made me aware of the great difference between my own Australian (western?) assumptions about human choice and freedom and even sophisticated Nepalis' view of freewill and determinism.

Later I talked with Amrit. "Did you understand my question about changes in your life and the influences responsible for them?" I asked. He shrugged enigmatically. "Village people think that what happens to them happens because of their karma, their fate," he said. "But you're not a village person," I said. "Do you think you have no control over what happens to you?" "We Nepalese don't like to think that we have that power because then if things go wrong we do not have to blame ourselves for any failure," he replied. "But if you hold this belief about your own affairs, what can you think about the way change happens in your village, your society, your land? Is this also the result of external forces which you can't influence? If people can't really influence what happens in society, how can we work in the field of Non-Formal Education, which is essentially to do with empowering people to solve their own problems?"

This seemed to me a critical philosophical issue that had to be resolved or all our efforts in development work would be in vain. It wasn't that Amrit and other

Nepalese did not often take quite decisive action to influence their own situation; they did. The important point was that they did not consciously acknowledge that this was what they were doing. Responsibility for their own actions was being denied or ignored. This makes an individual or a nation either passive and open to manipulation, always dependent on the will of others, or else bent on finding a scapegoat for shortcomings, excusing their own failure, sloth or even wickedness as helplessness in the face of an inexorable destiny.

"Tell me your life story," I said. "Start at the beginning, from the earliest things you can remember, right up to the present day. I will write it down, just as you say it."

Thus we began an absorbing afternoon as Amrit recounted growing up as an orphaned child in his grandparents' home in Nepal's hilly region; of being sent to the new school nearby, the first child in his family to receive education; it was his grandmother who sent him. When he used to run away from school in his troubled eighth year, it was his older sister who would come searching for him in the maize fields and lead him back to school. He was able to go to an excellent high school that foreigners had set up in his village and became a village school teacher upon his completing secondary school. A false accusation by a local official made him decide to leave the village and seek tertiary training so that he would be able to defend himself in future...

"You know," said Amrit, "this is the first time I have ever told my story like this". He could see now that it was because his grandmother had made an unusual decision that he was an educated man today. That older sister's persistence had also been part of the story. They could have left him to grow up like other village children - and that too would have been a deliberate choice - but they decided otherwise. Foreigners had made the choice to establish a high school in a remote Nepali village, and that decision affected Amrit's future; the Nepal Government had decided to grant permission for that school in that location and that too influenced Amrit's life. He realised in the telling of his life story that he could have acted differently in the face of the official's accusation: he could have remained in the village, being self-effacing and submissive to avoid future trouble, but instead he himself chose a new course of action and so he commenced his life in the university and the city.

That afternoon was a seminal experience not only for Amrit but also for me. It made me realise afresh how powerful is the medium of the story for sorting out our own experiences and motivations. I resolved to start collecting and publishing oral histories spoken by village people.

In our literacy work here in Australia, the Language Experience method was introduced at the 1979 ACAL Conference in Melbourne as a means of encouraging both reading and writing by adult literacy learners. By this method people are encouraged to tell their own experiences in their own words, either writing these stories themselves or, if their literacy skills are not yet sufficiently developed to do this, dictating their stories to some literate scribe. Minimal editorial work is done on these scripts so that the distinctive voice of the story-teller is preserved. Where a scribe is used, he or she will constantly read back to the teller the script as it has developed so far to give the author the opportunity to correct or refine the story. This interactive process is an essential part of the exercise, for it involves intense engaged listening on the part of the scribe and invites the teller to analyse the experience and present it so that its true significance can be shared by an eventual reader. When a literacy learner is telling the story and another is taking those words down at dictation, the teller is able to observe in another the actual process of writing: the way the pen moves over the page, the speed or slowness of transcribing, the correspondence between a spoken utterance and its symbolic visual representation, the frequency (and unimportance) of making mistakes and crossing things out. It also gives the story-teller the opportunity to focus solely on the content and stylistics of the story rather than to be concerned with the new and somewhat intimidating business of letter-formation, spelling and punctuation. This process of speaking the story also emulates the existing tradition of an oral culture and presents literacy as part of that continuum rather than the destruction of it.

In the process of telling such a story, the teller is enabled to stand outside of his or her own life and reflect upon it, in the same way that Amrit was able to recognise the influences that had shaped his own life.

A year later, we were trailing the first of our books, called *Pipal Pustak*, the books of the pipal tree. Now, six years later, there are twenty titles and sixty thousand copies being read in the hills and valleys and plains of Nepal. In September of this year, on World Literacy Day, we were presented with the Asia-Pacific UNESCO Biennial Prize for Fully-Illustrated Literacy Books. It means that public spirit of the elderly tree-planter, the courageous warning of the prostitute, the determination of the young girl seeking an education, the endurance of the soldier and the enterprise of the widow - these people who have told their stories - have been heard internationally and at home. The books are being borrowed every day from box libraries and little reading centres out in the high hills. They indicate, from the lived experience of their authors, that it is possible to choose change and to shape a new life for themselves and their communities. The same is true for us.

About the Authors

Assoc Professor Brendan Bartlett is a researcher, teacher and writer about memory, learning and communication. An Associate Professor and Deputy Dean (Academic) at Griffith University, Brendan is a UNICEF Fellow and a member of UNESCO's International panel of experts on international education.

Helen Beazley has worked as an English teacher but has mainly held positions within the Commonwealth Public Service, including three years in the Department of Finance in Canberra. her current position is as a project officer with the Australian National Training Authority.

Jennie Bickmore-Brand is coordinator of the Centre for Research and Development in Language and Literacy (Western Australian arm of NLLIA), Director of Adult Literacy Research Network Node for NLLIA, and lecturer in Adult Literacy and Numeracy. She has undertaken an extensive interpretive search to identify common principles of learning across many disciplines: language arts, mathematics education, education, socio-psycholinguistics, language and learning and early childhood learning. One result of this work has been the development of seven principles of teaching and learning which are currently being adopted across Western Australian secondary school. The **Bickmore-Brand Principles of Teaching and Learning** are recognisable to most teachers because they are embedded in good teaching practice.

Dr Stephen Billett has worked as a vocational educator, educational administrator, teacher educator, professional development practitioner and policy developer. Currently. he is working at Griffith University where his research interests include the social and cultural construction of vocational knowledge and attempts to reconcile cognitive and sociocultural constructivist perspectives

Paula Burns is a Master of Education *(Language and Literacy Education)* student at Deakin University, Victoria. She coordinates an adult literacy program for long term unemployed and other disadvantaged people. During the past three years her work has focused on computer literacy and its implications for adult literacy training.

Dr Ralph Catts is Director of the Vocational Education and Training Research Institute at the University of Southern Queensland. He has previously been a researcher and a manager in NSW TAFE and a policy adviser in post-compulsory education and training. His current research interests are effective workplace learning and the role of generic and specific industry competencies.

Clive Chappell is Senior Lecturer, School of Adult Education, University of Technology, Sydney. He has researched and published in the area of competency standards development and has a particular interest in the human services sector. He has recently completed a major research project to develop a professional competence profile for teachers working in TAFE NSW.

Jean Clarke commenced her teaching career in 1966 as a home economics teacher in Victoria. She is currently completing Masters of Education studies in Special Education with a thesis on literacy being undertaken. She has taught both community and labour market literacy programs at the Bremer Institute of TAFE since 1992 and has a special interest in reading pedagogy.

Dr Tom Cooper is Associate Professor and Head of the School of Mathematics, Science and Technology Education at QUT at Kelvin Grove. His research interests include acquisition and application of mathematics concepts and principles, mathematical problem solving, professional development and teacher change in mathematics, and adult and workplace learning of mathematics. In the area of adult numeracy, Tom has been particularly interested in developing effective methods for encouraging adult learning of number, operations, fractions, decimals and algebra. His focus has been on the development of materials, language and activities that will enable adults to make meaning of mathematics and on drawing connections between topics that will reveal the structure of mathematics.

Chris Corbell is the Manager of the Centre for Computing Literacies and Information Competence at Adult Migrant English Services, Victoria. He carried out the research described in the paper for the National Centre of English Language, teaching and Research while on secondment to the Department of Linguistics and Applied Linguistics, University of Melbourne.

Shelly Dole is a lecturer in the School of Mathematics, Science and Technology Education at QUT at Kelvin Grove. She is presently finalising a Doctor of Philosophy degree in mathematics education. Shelley specialises in techniques to reteach mathematical knowledge to students with misconceptions. She has been involved in instruction programs which have developed adults' abilities to mediate between old incorrect knowledge and new correct knowledge. She has expertise in adult learning of number, fractions, algebra and problem solving and a particular interest in the teaching of ratio, proportion and percent.

Dr Ian Falk is a Senior Lecturer and Sub Dean of Adult and Vocational Education at the University of Tasmania. He is also Director of the Adult and Vocational Education Studies Unit (AVES) at the university. He has been the Chief Research in an ALLP Project and a Researcher in two other major ALLP projects.

Margaret Fletcher lectures at Griffith University in literacy education. She is a writer about literacy practice in primary and tertiary fields of education, and a consultant to schools in developing and implementing English curriculum and policy.

Dr Bill Hall is a Consultant to the National Centre for Vocational Education Research Ltd (NCVER). He was the Chairperson of UNESCO Non-Government Organisations for five years and is the author of 26 books, 250 articles, and over 100 research papers. He has worked in business, higher education and research.

Ann Kelly is an adult literacy teacher at the Southbank Institute of TAFE in Brisbane. She is currently studying the communication practices of office skills teachers when working with administrative assistant trainees.

Anne Kiley is a teacher at the Canberra Institute of Technology in the Department of Adult Preparatory Education. She has come to literacy via literature, linguistics and communication and has a special interest in flexible delivery.

Sue Kilpatrick lectures in the Diploma of Adult and Vocational Education at the University of Tasmania and has acted as Chief Researcher and Manager of two large ANTA grants. In her current PhD work she is examining the links between training and profitability in the rural sector.

Bill Langlands has lectured in English literacy and humanities in the faculty of Aboriginal and Torres Strait Islander Studies at the Northern Territory University since 1990. Recently, he coordinated the writing and development of a suite of three certificate courses in general education. He previously worked for ten years in Aboriginal vernacular literacy programs.

Colin Lankshear is Professor of Education at the Queensland University of Technology where he works as research coordinator in the School of Language and Literacy Education. His interest in the work of Paulo Freire led him into researching literacy within school, community and workplace settings, spanning the First and Third Worlds. He is currently leading a research team investigating the interface between new technologies and language/literacy learning.

Irena Morgan-Williams has been involved in workplace and community literacy and language acquisition for twelve years. Currently she is studying in a Doctoral of Education course at the Queensland University of Technology and is focusing on workplace learning.

Jean Searle is a lecturer in Communication and Adult Literacy subjects within the School of Vocational, Community and Technology Education at Griffith University. She has been involved with adult literacy as a volunteer tutor, teacher and program coordinator for more than ten years. She is currently working on a history of adult literacy in Queensland.

Dr Julie Spreadbury has been a lecturer in Language and Literacy Education at the Queensland University of Technology (QUT) for the past 27 years. She is Director of the Parents and Literacy (PAL) program and has just been awarded a large community grant from to conduct this for 1000 Brisbane parents in the next year, working in conjunction with the Queensland Council of Parents and Citizens Association and the Federation of Parents and Friends Association of Queensland.

Kath White was a founding coordinator of the NSW Adult Literacy Information Office and a founding member of the ACAL and the NSW Adult Literacy Council. She has also been a literacy consultant in Nepal.